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NOTE ON THE EXCRETION OF UREA.

BY FRED SMITH, A.V.D., ARMY VETERINARY SCHOOL, ALDERSHOT.

THE quantity of urea passed by a horse in health and disease was discussed lately at a meeting of the Scottish Metropolitan Veterinary Medical Association. As the composition of the urine of healthy horses is being studied in the laboratory of the Army Veterinary School, and as I have made during the last fourteen months a number of analyses with the object of publishing the results when completed, I may be permitted to state the quantity of urea for twenty-four hours.

There is no analysis of the urine of any value that is not calculated *on the total quantity passed in twenty-four hours.* The difficulties of obtaining this in healthy animals is very considerable, and I have had to construct a special stall for the purpose. To obtain the total quantity in sick animals is quite impossible, or, at any rate, is out of the question unless a special form of urinal be worn.

Calculations made as to the excretion of any substance with the urine, are unreliable when the total quantity of fluid passed is unknown, for the reason that the amount passed by the same horse will vary from day to day, and the quantity passed by different horses is very dissimilar. Some may pass two gallons, and some two quarts in twenty-four hours, and so on. It is obvious that the quantity of urea and other matter passed per ounce in each of the above urines will not be the same; the urine of two gallons will contain per ounce only one-fourth as much matter as the urine of two quarts; therefore, it is clear that any comparison between them ounce for ounce can only be misleading. Two horses, we will suppose, for the sake of argument, are excreting exactly the same amount of solid matter daily, but one is

passing two gallons and the other two quarts of urine in twenty-four hours; to compare the chemical composition per ounce, without knowing the amount of urine secreted by each animal, will have the effect of showing that one is secreting four times the salts of the other, for it is obvious that every ounce of the two-quart urine must contain four times the amount of the two-gallon urine, if it is to equal it in the weight of solid matter.

The error likely to arise from a non-observance of this rule, of only calculating results on the total quantity passed, is obvious. Up to the present my analyses show that healthy horses pass on an average 160·63 grammes of urea daily; this quantity is equal to 5 ozs. 291 grs., and is contained, on an average, in ten pints of urine; but the amount of this latter secretion will vary considerably even in the same horse from day to day. The smallest amount I have known passed is $5\frac{1}{2}$ pints, and the largest 17 pints. If we assume the average amount of urine passed to be 10 pints, then the average urea will equal 12·39 grains per ounce.

I have only once had an opportunity of examining urine from a case of Azoturia. The total quantity passed in twenty-four hours I do not know, so it is impossible to say whether the urea and other substances were normal or not. I can only *roughly guess* whether the substances were in excess or deficient. Azoturic urine: Sp. gr. 1028 (1035-1040 normal); reaction slightly alkaline (markedly alkaline in normal urine); colour, deep chocolate. The urea equalled $9\frac{3}{4}$ grains per ounce. I believe the chloride of sodium, lime, and sulphuric acid were much less than in normal urine, but on this and the above points it is impossible to be certain, as the total urine secreted was unknown. The albumen was large, being one-third of the bulk of the fluid passed. Ammonia was present.

If the statements made at the Association, concerning the amount of urea passed, have been calculated on the total quantity of urine secreted, then there is no occasion for this note.

SCHIRROUS CORD.

BY H. J. HUNT, M.R.C.V.S., NEWBURY.

HAVING operated on several cases of schirrous cord lately, I would like to record the cure of the worst of them, and thereby draw the attention of the profession to the use of some of the much-coveted expensive instruments on which the veterinary medical associations would like to spend their money.

Last autumn my opinion was asked as to the nature, consequences, and treatment of a gradually increasing excrescence of this kind, found on a big chestnut hunting gelding. I recommended excision, and having waited until the middle of May, was informed that the operation must be done under chloroform.

On May 28th I went to operate. The chloroform was administered by means of the most approved chloroform cap, which was found to be a most elaborately awkward contrivance, more calculated to waste the drug than administer it to the horse. However, with almost excessive care, the horse was rendered quite insensible. He was then fastened with a rope in the usual position for castration. The lump, which by this time had greatly increased in size, was fixed by a suture, and a dissection was made upwards towards the abdominal ring. After cutting upwards about six inches, to a point where no schirrosity could be felt, the chain of an ecraseur was put round the remaining attachment, and on pressure being applied the chain immediately broke; the same result ensued with another chain, leaving me to fall back on the actual cautery—a proceeding commented on by the medical attendant of the family, who was present. The wound was left open for drainage, and the animal allowed to regain consciousness. When he came round, he had to make two or three attempts before he staggered to his feet, and then he walked into his box with very uncertain steps. The tumour weighed 3 lb. 2 oz., and measured ten inches long, being pear-shaped.

After being very sick for a day or two, his appetite gradually returned. On June 1st the wound, which was being treated with carbolic dressing, and had been granulating, was found to be red and angry-looking, and giving off a very offensive smell. Some gangrenous pieces of skin round the edges having been removed, Ol. Eucalyp., the dressing lately recommended for use in these cases by Mr. Fred. Smith, was tried, and with remarkable success; the swelling subsided, the immense hole filled up, the fœtor disappeared, and the stiffness of the hind quarters went away. The animal lay down. On June 20th the horse was sent to exercise, and visited for the last time. Now he is quite well, and is in training for the next time the hounds are near.

With a towel, a sponge, an iron, and a knife I could have done the same operation, and saved the money I have spent over my useless chloroform cap and ecraseur.

[The same accident has happened with ourselves when using the chain ecraseur for the removal of these growths. It is entirely obviated by the employment of the steel wire ecraseur, which is in every way preferable to the hot iron.—Ed. *V. J.*]

RHEUMATIC ENDO-CARDITIS.

BY J. A. NUNN, F.R.C.V.S., F.R.G.S., ARMY VETERINARY DEPARTMENT, MARITZBURG, SOUTH AFRICA.

A SEVERE type of Rheumatism is very common in horses in this colony, particularly in animals recently brought down from the Orange Free State; it is most prevalent in the South African autumn (February, March, and April). The attack usually comes on very suddenly, with great pain, heat, and swelling of the joints, particularly the stifles and shoulder joints, with considerable febrile disturbance and large increase of temperature. Usually the attack yields to ordinary antiphlogistic and counter-irritant treatment, with the administration of salicine, salicylic acid, or salicylate of soda; but many cases assume a chronic form. In these rapid marasmus is invariably present, and when this sets in the case is almost hopeless. The animal from which the specimens that I send you drawings of were obtained was a trooper of the 6th Dragoons. On *post-mortem* examination it was found that there was considerable arthritis of the stifle joint, with ulceration of the cartilage, the surface being literally honeycombed. The drawing No. 1 shows the appearance of a transverse section through one of these ulcer pits. The cells round the margin of the ulcer have increased in size, some developing more than one nucleus. The edges of the ulcer show a number of ragged projections from the broken-down matrix projecting into the orifice. The drawing No. 2 is a vertical section through one of the tricuspid valves, in which well-marked endocarditis is present. I have endeavoured to show the appearance of a section through one of the ulcers, the endocardium being destroyed, and two granulating masses growing up from the abraded surface. Both specimens are from the same animal, and are seen under Zeiss's BB objective and No. 2 eye-piece stained with Ranvier's picro-carmine.

Editorial.

THE EXTINCTION OF RABIES AND HYDROPHOBIA.

THE report of the Select Committee of the House of Lords on Rabies, which appears in this month's Journal, may be looked upon as a complement to that of the committee on Pasteur's method of preventing the disease by inoculation; but to the veterinarian and sanitarian it is of far more importance, inasmuch as it enunciates the opinion which has been long entertained by those who have studied the malady, that the disease may be stamped out once and for aye, if only the proper measures are adopted. In the report itself there is nothing which had not already been made known and insisted upon by the veterinary profession in this country, but unfortunately ignorance and a pseudo-sentiment have been only too successful in maintaining the malady in all its virulence and extent. Those who oppose all measures for the suppression of the most destructive and loathsome diseases of mankind have done their utmost to keep Rabies in our midst, and the numerous deaths of human beings and animals from it may fairly be credited to their account. Now, however, that a most influential and trustworthy body of noblemen have sifted all the available evidence they could procure, and have drawn up such a fair and explicit report, it is to be hoped that we shall hear no more of such sentimental nonsense, and that general measures will be drawn up and carried into operation which will free us from a scourge that should have been rooted out long ago. With the disappearance of Rabies, veterinary science will have achieved another victory.

THE ETIOLOGY OF "ROARING."*

BY DR. GUSTAV VAERST, ROYAL VETERINARY SCHOOL, HANOVER.

THERE are many cases of paralysis of the vocal cords mentioned in the literature of human medicine, which originate from intra or extra-cranial causes. Among the first may be noted, Encephalitis, diseases of the medulla oblongata, with resulting degeneration and softening of the vagus or origin of the eleventh nerves, tumours in the cranium or foramen lacerum, caries of the cranial bones, etc. Among the extra-cranial causes may be numbered traumatic neuritis, paralysing poisons, infectious diseases, swellings in the neighbourhood of the tract of the accessorius, vagus, or recurrent nerves, disease of lymph glands, etc. A few specially interesting cases are reported by Romberg and Tiemssen of uni-lateral and bi-lateral paralysis of the vocal cords, following upon paralysis of the accessorius.

The scarcity of observations of this description in veterinary practice is probably chiefly due to the undeveloped state of this branch of knowledge, and to the great difficulties in the way of observing nervous disease in the lower animals. Nevertheless, here and there records are to be found of

* Synopsis of a paper in the *Deutsche Zeitschrift für Thiermedicin*, 22nd June, 1887. Translated by F. Raymond, F.R.C.V.S., Army Veterinary Department.

Roaring following upon mechanical lesions, such as phlebotomy. Such factors as harness pressure and wind-sucking straps do not appear to be admissible as causes, because the recurrent lies too deeply to be likely to suffer sufficiently from this kind of pressure to become paralysed. Günther, jr., does not believe that Roaring follows disease of the thoracic glands, nor in the "Spasmodic Roaring" which follows paralysis of the commencing portion of the vagus, and consequent paralysis of the Crico-thyroideus muscle, the result of ennervation of the superior laryngeal nerve. Roaring is observed after Strangles and Influenza. It is well known that diseases which cause thickening of the mucous membrane or œdema of the glottis will give rise to abnormal sounds during respiration. But Roaring, *per se*, only occurs after an inflammatory affection, and after lesion of the glands lying in the course of the nerves, the sub. and retro-pharyngeal, trachealis superiores, tracheales mediæ, and trachealis inferiores. It is conceivable that the diseases mentioned above—like Diphtheria in man—have a predilection for attacking the muscles of the throat, and that the specific process is communicated to the peripheral nerves, thus leading to paralysis of the nerves.

This neuro-pathological genesis theory may be placed side by side with one which characterises the disease as an inflammation of the larynx and pharynx, which subsequently attacks the muscles of the larynx, ending in degeneration of the same.

Gerlach explains one of his cases of roaring by the latter theory.

Anatomical demonstration of the first occurrence of paralysis of the muscles, resulting from Strangles or Influenza, is wanting.

It is only while the nerves are in the thorax that they may become differently influenced from anatomical causes; in the channel of the neck they are upon an equal footing.

Scientific experience has proved that ninety-six per cent. of cases of Roaring are due to insufficient tension of the vocal cords, due to atrophy of the dilators of the larynx, Crico-arytenoideus post. (principally), Crico-arytenoideus lat., and Arytenoideus trans. This atrophy is due, almost without exception, to paralysis of the motor nerve, *i.e.*, recurrent. The disease almost invariably attacks the left side.

Paralysis may occur suddenly or gradually; it may be complete or partial (Paresis). It may have a favourable or unfavourable prognosis, according to its genesis.

If a motor nerve becomes severed or otherwise paralysed, the peripheral end, going to the muscle, becomes gradually unstimulatable, undergoes fatty degeneration, and later on, atrophy. The muscle it supplies also atrophies. Various authors have demonstrated that section of the right or left recurrent invariably causes Roaring. According to Günther, jr., there is "never atrophy of the dilators without paralysis of the nerves," in Roaring.

The almost constant occurrence of lesion of the left side of the larynx is due to the peculiar position the left recurrent holds in the thorax.

The left recurrent leaves the vagus over the base of the heart, and, covered by the pleura, goes to the left side of the aortic arch, over the Ductus Botalli. It then passes inwards and forwards round the arch of the aorta. Here it passes for about 5 cm. between the aorta and the trachea, being bounded posteriorly by a mass of the posterior glands of the middle mediastinum. It is also bridged over by fascia originating from the endo-thoracic fascia and terminating in the fibres of the pericardium. This fascia is divided on the left surface of the trachea into two portions. The left part is connected with the fibres of the left part of the pericardium, and the right goes to the right part of the pericardium. The nerve passes between the latter and the trachea, and can be seen shining through its covering. In its further course it gradually gets to the under surface of the trachea, and bends round between it and the

arteria innominata or carotid, passing out of the chest in apposition with the œsophagus, under the sympathetic and vagus, to the left surface of the trachea, and travels up it in front of the carotid. Arrived at the upper third of the neck, it again travels a short distance along the œsophagus, and then in the channel between it and the trachea, until within about 2-3 cm. of the first ring; it then passes obliquely outwards and forwards, between the Crico-pharyngeus and Crico-arytenoideus posticus, and loses itself in the latter and the Crico-arytenoideus lateralis and transversus.

The N. recurrens dextra is given off by the vagus as it appears from under the A. subclavia dextra. It does not come in contact with the pleura, because there are veins which intervene. It passes at once inwardly round the anterior intercostal artery, traverses the anterior mediastinal space, in the angle formed by A. profunda cervicis and A. vertebralis on one side and the trachea on the other, and leaves the thorax under the trachea, the sympathetic, and vagus. It then reaches the outer surface of the trachea, and travels up this organ in front of the carotid in the same way as the left recurrent.

It must be admitted that in consequence of above-named relations of the left recurrent with the pleura, an inflammation of the latter might implicate the nerve. Speaking upon disease of the left side of the larynx as a result of Pleuritis, Dieckerhoff says: "I know of several cases in which horses which have recovered for some weeks from an attack of Pleuritis have become roarers." It is probable that in such cases the peripheral portion of the nerve is attacked; that the exudative process which occurs in Pleuritis involves the nerve in the chest, and brings about Neuritis. Both neurilemma and neuroglia may become affected, resulting in a diminution of the conductibility of the nerve. Severe Neuritis, leading to degeneration of the fibrillæ, is almost invariably followed by atrophy, but even a mild perineurotic process may cause atrophy of the muscles supplied. It may also occur that callous thickenings on the pleura involve the nerve in a process of cicatricial contraction. It is notorious that disease of the peripheral extremity of nerves is promptly followed by disturbance of the nutrition of the muscles supplied; even the slightest irritation of the nerve is not without result.

The mass of glands, situated in the middle mediastinum, may become diseased, and by swelling press upon, and thus paralyse, the left recurrent.

In order that my next remarks may be better understood, it is necessary to say a few words about nerve-stretching and nerve-pressure. Nerves may be stretched to a certain extent, and recover soon afterwards. This process, which at first causes increased sensibility, if carried too far, produces an exactly opposite result. If the stretched nerve be examined microscopically, it will be found, as a rule, that Schwann's sheath is unchanged, but that the axis cylinder, neurilemma, and medulla are altered and may have vanished. The elasticity and strength of the nervous elements vary in individuals, and are also dependent upon the diameter of the nerve, so that no general measure of elasticity can be laid down. It may be assumed that the axis cylinder, the essential carrier of excitability, being the most delicate substance, suffers most from stretching and pressure.

Great mechanical shock (a blow or strong pressure) causes paralysis of a nerve, by disorganising its molecules; whereas gradual pressure causes degeneration by insufficient blood supply. Fontana in 1797 had already demonstrated that gradually-increasing pressure destroys the conductibility of a nerve. Motor fibres suffer more particularly from compression, for Heilroth observed in radial Paralysis (in man), due to the use of crutches, that the disease first attacked the motor and afterwards the sensory fibres. Lüderitz makes the same observation.

The left recurrent is exposed to both stretching and compression to a great extent. Under normal circumstances, it is exposed to considerable pressure

by the posterior aorta. It should be borne in mind that the left recurrent is situated between the aorta—just where the blood pressure is greatest—and the trachea. The nerve cannot escape the pressure, for it is in apposition with the hard rings of the trachea. If the nerve, under normal circumstances, is compressed, how much more will this occur under pathological circumstances, when the blood-pressure is increased. Prof. Sussdorf has noticed an almost constant flattening of the nerve at this part, as a physiological result of the pressure.

There are not wanting, in human medicine, of instances of Aneurysm of the aorta causing atrophy of the left recurrent. As Aneurysms occur sometimes in horses, perhaps more frequently than we have hitherto observed, it is possible that these may be one of the causes of Paralysis of the left recurrent. Aneurysms will even cause bone to become absorbed. Paralysis might also be caused by an aortic Aneurysm stretching the nerve backwards.

The left recurrent in its onward course is bridged over by fibrous tissue, which originates in the endo-thoracic fascia, and is inserted into the pericardium. This tissue, as well as the great blood-vessels, has to bear no unimportant part of the weight of the heart, so that considerable tension is exercised upon it, causing compression of the nerve. This tension, under pathological circumstances—Hydrops pericardii, partial or complete hypertrophy of the heart—may become increased.

The left recurrent is again in a similar position, as regards liability to pressure, when it passes between the Arteria innominata (or the common carotid) and the trachea, to that which it is in when passing round the arch of the aorta. The pressure, however, is not so great; nevertheless, it may, under certain circumstances, be sufficient to do harm.

Again, we have the œsophagus, which passes to the left of the trachea, in the anterior part of the chest and lower part of the neck, and which, therefore, comes very near the left recurrent. Dilatations and tumefactions of this organ might interfere with the nerve and cause paralysis.

Finally, a similar pressure might occur where the recurrents pass between the carotids and the trachea, to take up a position on the anterior edge of the carotid. The left recurrent is about a third longer than the right.

If we now examine the course of the right recurrent, we shall find that it is given off by, and leaves the vagus, almost as soon as the latter enters the thorax. As it is not in connection with the pleura, it suffers no direct danger in the Pleuritis of Influenza. It passes round an important blood-vessel, the A. subclavia dextra, which, under circumstances which have already been alluded to, might cause extra pressure; but it will be seen that the right recurrent is not in such close apposition to the trachea as the left, and is, therefore, better able to escape compression. Even an aneurysm of the A. subclavia dextra would not interfere with the nerve to any great extent.

When the nerves have reached the anterior border of the carotids, the chances of their becoming injured are equal.

I know of no nerve which is subject to as many dangers as the left recurrent.

The hereditariness of Roaring is almost constantly given as one of the causes of the disease. This may be justifiable if hereditary predisposition is meant, and not congenital disease. Owing to inherited anatomical variation in individuals, one animal may suffer slightly, another still less; whereas in one animal the nerve merely differentiates dangerously in its course; in another, the nerve being in a similar dangerous position, may become influenced by the factors already mentioned—blood-vessels, fascia—endo-thoracica, etc., etc.—and thus diseased.

These anatomical peculiarities may be transmitted, and form the *causa interna* of Roaring in the offspring.

It is worthy of note that well-bred (English) horses frequently suffer from Roaring. These animals have a large vascular system and high blood pressure, and thus inherit a constitution exposing the left recurrent to all the dangers which have been noted above.

Martin, in addition to the dangers due to vascular arrangement, draws attention to those caused by the "enormous" length of neck developed by breeding.

I am not in a position to state how far Roaring, caused by mechanical injuries, is hereditary.

EQUINE SYPHILIS IN THE UNITED STATES OF AMERICA.

THE horse disease known in France as the "Maladie du Cöit," in Germany as "Beschalkrankheit," and to the Arabs as "El Dourine," has been discovered in the United States, having been carried there by French stallions imported in 1885. Illinois appears to be the state in which the malady has manifested itself, and our latest information is to the effect that nine Norman stallions are in hospital at Bloomington suffering from the disease; two imported stallions and forty mares had died, and twenty mares are now affected. This is a very serious condition of affairs, and unless promptly met may greatly damage the horse-breeding interests of the Western States. The disease is analogous to human Syphilis in being communicated chiefly during copulation; in some other features, it also resembles that scourge. In "Veterinary Sanitary Science and Police" it is fully described; but since the publication of that work the Austro-Hungarian Government has published the researches of one of the teachers at the Buda-Pesth Veterinary School, which throw much additional light on the disorder, which is as yet happily unknown in this country or its possessions. Once begin to import stallions for breeding purposes from the countries in which it prevails, however, and our immunity is gone.

REPORT OF THE COMMITTEE OF THE HOUSE OF LORDS O RABIES IN DOGS.

ON May 17th the House of Lords appointed a Select Committee to inquire into and report upon the subject of Rabies in dogs, and the laws applicable thereto. The Committee consisted of the Lord President of the Privy Council (Lord Cranbrook), Duke of Beaufort, Earls of Coventry, Carnarvon, Onslow, Zetland, Kimberley, Milltown, and Lords Walsingham, Ribblesdale, Poltimore, Belper, and Mount-Temple. A large number of witnesses were examined, those of the veterinary profession being Professor Brown, C.B., Dr. Fleming, C.B., Professor Pritchard, A. J. Sewell, W. A. South, J. W. Hill, W. Hunting, and J. Rowe.

The report of the Committee has just been issued, but not the evidence upon which it is based. It is as follows:—

1. That although witnesses have spoken for and against M. Pasteur's system of treatment of Hydrophobia, we do not think it within our province to discuss or question the conclusions of the Committee appointed by the Local Government Board to inquire into that treatment. The evidence given to us on this point, having a close connection with the matter referred to us, could not well be excluded, but considering that the highly competent

persons who formed the Pasteur Committee arrived unanimously at their decision after very full investigation and confirmatory experiments, we are not prepared to throw doubt upon the result. It may be hoped, therefore, that a preventive remedy has at length been found for a disease which, when the symptoms are developed, appears incurable, and that further tests will so establish the system that it may be applied not only in Paris, but in every place where the need may exist and scientific skill be found.

2. We believe that while it cannot be absolutely demonstrated that Rabies does not arise spontaneously, yet it is practically proved that subcutaneous inoculation with its virus is the only ascertained means of imparting the disease, and that in order to check it every effort should be made to prevent the dissemination of that infective substance.

3. The fact that Rabies is and has been long unknown in certain countries, in none of which are there verified instances of its spontaneous development, strongly confirms the prevalent scientific opinion that such development is not credible. The evidence as to the islands of Réunion and Mauritius has a weighty bearing upon this question, while Scandinavia affords a like testimony.

4. We may remark that climatic conditions have no effect in producing or increasing the malady, and that in the hottest and coldest regions it is absent; and it has been shown that no special treatment of dogs, however trying to them, can bring about this particular affection. For all practical purposes, therefore, it may be dealt with as transmitted by inoculation only.

5. The frightful character of Hydrophobia in man naturally engenders horror at the bite of a dog, and unreasonable dread very often occurs. It ought to be known, however, that the percentage of those bitten by a rabid dog who become infected is by no means large, and that various causes operate to lessen the danger. Where clothes intervene between the teeth and the flesh the risk is less, and successive bites may wipe off the saliva, so that from the later ones less serious consequences are to be apprehended. The effect of immediate cauterisation is doubted by some, but in the present state of knowledge it is prudent to resort to it, and the methods most recommended are the hot iron or carbolic acid. It is clear that panic attributes Rabies to many dogs which are free from it, and there are indeed so few which really have the disease, that the great probabilities are in favour of persons bitten escaping the consequences too readily feared. During the existence of the stringent police order in London many of the force were bitten, some by dogs ascertained to have been rabid; protective measures were taken, and none suffered from Hydrophobia, and at the Dog's Home, while bites have been numbered by the thousand, there has not been a unit to represent that fatal disease. Should M. Pasteur's treatment prove a preventive, the fears which have in themselves most prejudicial effects upon those who suffer from them will be further allayed.

6. The symptoms of Rabies in the dog, when fully developed, seem to be so clear that they may be accurately described, but sometimes a bite is the earliest indication of them, so that danger may precede the warning. Still, as it seems to be proved that a dog's bite is not likely to impart disease until the incubation is complete and the external indications begin to develop themselves in a form which to experts is unmistakable, it is very desirable that a knowledge of these symptoms should be widely spread, and there is one ready method by which this object may be secured. As every owner of a dog ought to have a license, an endorsement of the early signs of Rabies upon it would ensure a large circulation among those most interested, and Sir Algernon West (Q. 1945) is of opinion that there would be no difficulty and little expense in the adoption of this proposal.

7. It has been suggested that in all cases where premonitory symptoms of

Rabies appear, the dog should be at once handed over to the police, and by them to a veterinary surgeon, who would, of course, require a fee. This process might perhaps succeed in a town or populous district, where an adequate force, a fitting place for the reception of dogs, and skilled veterinary surgeons could be secured; but it is hardly applicable to wide country districts, where the population is thinly spread, and where it could scarcely be expected that police would be efficient for the purpose, or that convenient receptacles, and sufficiently numerous and skilful veterinary experts would be found. The cost to the ratepayers must also be considered, and it would in all likelihood be out of all proportion to the good effected.

8. A large number of witnesses, with no slight claims to respect, have expressed themselves strongly in favour of universal muzzling for a fixed period (which may be put at twelve months), with a view to the extirpation of the disease; and this would need to be supplemented by quarantine, of a kind amounting in effect to exclusion of foreign dogs, but the exceptions which admittedly must be made would be so large as to impair the efficacy of the restriction. A reference to the number of dogs exempted from the dog license, as stated by Sir A. West (Q. 1691), makes this evident; but, if hounds and other sporting dogs are added to these, the result must be even more adverse to obtaining anything approaching to the universality which is required in order to stamp out Rabies. The evidence in favour of the muzzle is extremely strong, but neither the public nor the dog-owners would readily submit to it, except when the malady was abnormally prevalent, and exceptions would weaken the effect of a general order and cause constant remonstrances. Your Committee, however, are of opinion that the effect of muzzling dogs in London was very beneficial, but under the Metropolitan Streets Acts it was not found possible to enforce the muzzling order, because no penalty exists under that Act, whereas under the Dogs Act, 1871, there is a penalty. Mr. Whitelegg's evidence as to Nottingham lends support to those who favour its extended use. It must be admitted, however, that there are very many who do not consider that the muzzle itself was the effective instrument of checking Rabies; but that the seizure, detention, and destruction of stray dogs, and the unusual care which dog-owners exercised under pressure, were of no little avail in bringing about the diminution of the disorder.

9. In the city of Berlin special regulations are in force. In consequence of a severe outbreak of Rabies in the year 1852, during which 107 dogs were destroyed as rabid, the Royal Police issued a decree, on the 2nd July, 1853, to the effect that all dogs should be provided with a wire muzzle positively preventing the animal from biting, and to empower special persons appointed by the police for that purpose, to seize and destroy all dogs not so muzzled; and when the owner could be found, imposing a fine of 10 thalers (£1 10s.), or a term of imprisonment. In the year following this decree only one dog was killed as rabid, against 97 in the previous year. The decree still remains in force, but does not seem to have been effectual in preventing the recurrence of epidemics of Rabies; for the number of dogs killed as rabid, which up to 1863 had not exceeded in any year 9, rose progressively in the succeeding years, till in 1868 the number reached 66, declining again to 7 in 1870, only to increase in 1872 to 69. In 1875 a law was passed, extending to the whole of Prussia, for the suppression and prevention of animal disease, which provides that all dogs suspected of Rabies shall be immediately killed, as also all animals which it is evident have been bitten by rabid animals; and that all dogs in a district which has been infected by an outbreak of Rabies shall be confined, or when abroad both muzzled and led. The Technical Section of the Veterinary Board in Berlin are of opinion that the passing of this law, and not only the existence of the muzzling order in that

city, is the cause of the extinction of Rabies in Berlin; no case has occurred there since 1883.

10. Stray, ownerless dogs are, no doubt, in most instances the vehicles of contagion, and more effective powers, not only to seize but to slaughter, are desirable.

11. Since 1886 dogs have been brought within the animals subject to Orders of the Privy Council, and there is now in operation an Order of January, 1887, which gives to local authorities very large powers for the regulation and control of dogs. This Order will be found in the Appendix. As these powers are delegated, they, of course, exist in the Privy Council itself, and could be imposed upon, as they are now assigned to the local authorities. There are, however, such great advantages in ensuring the active co-operation of local opinion, that it seems undesirable, except in some pressing emergency, to enforce rather than to allow. We are of opinion that in ordinary circumstances, the local authorities should initiate, but that, if one local authority is crippled by the inertness or opposition of its neighbours, the Privy Council should intervene and extend the area of control and restriction sufficiently to ensure, as far as is practicable, adequate means for the repression of Rabies in that part of the country. In all cases where Rabies is prevalent we are of opinion that the use of the muzzle should be enforced.

12. The Privy Council has been advised that it has not and cannot confer the authority to destroy stray or ownerless dogs. We think, however, that this power ought to exist, and that dogs which are seized and unclaimed for three days should, if it is deemed advisable, be put to death. A penalty is now imposed for concealment of cases of Rabies, and local authorities are bound at once to communicate to the Privy Council every instance of it brought to their knowledge. The law in these cases should be strictly enforced.

13. It is, perhaps, hardly within our function to enter upon a question of the rearrangement of taxation, but it would be of assistance towards the getting rid of stray dogs if the collection and proceeds of the dog license were assigned to the local authorities, charged with the duty of seizure, and, in case of necessity, of slaughter. They would then be vigilant in looking after the tax, and would have their attention constantly called to the dogs within their district. There is a general impression that the number of unlicensed dogs is very great, but Sir Algernon West considers it exaggerated. A plan which has been proposed that every dog should have a metal badge attached to his neck, as a sign that a license has been taken out for him, and that he has an acknowledged owner, might afford a test of its truth. This regulation is said to have been enforced with good effect in Vienna and elsewhere, but it does not appear to have been in force throughout any country. Rabies is more rife in populous districts than elsewhere, and the scheme suggested could be more easily worked in them, as the police, to whom the duty of seizure must be entrusted, are, in such places, generally sufficient for that purpose.

14. Many are of opinion that every dog should be registered, and that the badge should be the mark of registration as well as of license; but there are obvious reasons why this could not be effected without a complete change of the law. At present the license is not for a special dog, but for the owner of a dog, and the licensee may keep as many dogs as he takes out licenses, without reference to the species of any one of them. If he has ten dogs of one description at the beginning of the year, his licenses will avail for ten of a totally different kind if the number in the whole is not exceeded.

15. It might be useful if the local authorities had power to order the use of a badge in their district, which would enable them at once to ascertain the owner of a dog, and to deal summarily with all dogs without it. In dense

populations, indeed, special regulations for dogs are required, quite irrespective of the danger of Rabies, for the protection of the inhabitants, and especially children, who are exposed to great risk, where the streets are their main playground and so many parts of their persons are unprotected. If very stringent measures were authorised and taken against all wandering dogs with no mark by which their owners could at once be found, they would probably lead to a general voluntary use of collars or badges with the name or address of the owner, or some token by which he might be known.

16. Some objections have been raised to the use of the police for the seizure of stray dogs, but we do not see our way to exempt them from this duty, nor to recommend any other body who should be entrusted with the execution of the work. At times, it may be expedient to employ special men for this particular purpose; but even then they should be under police rule, so that two authorities may not clash.

17. Some point has been made of the fact that other animals besides dogs are liable to Rabies, and may be the means of spreading it. We are satisfied, however, that, except in rare instances, the dog has been the cause of disease in man, and though cats and tame foxes may have occasionally done mischief, we see no ground for believing that wild ones have ever in this country communicated the malady to man, or to animals under his charge, as deer, cattle, and sheep, which have frequently so suffered after having been bitten by rabid dogs. The test which can now be applied to ascertain with certainty the presence of disease, should ensure the slaughter of all animals known to have been bitten by a mad dog. If Rabies among dogs were stamped out, we believe that there is little cause for apprehension of its re-introduction by other animals, carnivorous or herbivorous.

18. A foolish notion prevails that a dog which has bitten any one should at once be killed as a means of averting danger. This leads to needless slaughter; but if done, some veterinary surgeon should extract the spinal cord, and send it, after taking proper precautions for its preservation in transit, to the Brown, or other licensed institution, for experiment. In all but the clearest cases, however, it is important that the dog should be carefully isolated, and that some one skilled in canine diseases should see the dog while alive, and advise what should be done with it.

19. We call attention to some evidence as to the blunting of dogs' teeth, but cannot believe that such a measure can be of universal application, though it may be painlessly and usefully applied in certain cases.

20. We annex a note upon foreign regulations, as far as they have come before us, in the Appendix.

21. The Contagious Diseases (Animals) Act of 1886 gives power to the Privy Council to include dogs among the animals to which the Contagious Diseases (Animals) Act of 1878 applies, and in January, 1887, an order was made under that Act, which is generally permissive. It allows local authorities to make regulations for the muzzling of dogs, for the keeping of dogs under control, for providing for the seizure and detention of dogs straying unmuzzled or not under control, and, where dogs are at large and affected with or suspected of Rabies, for their seizure, detention, and, if necessary, slaughter. It makes obligatory that notice of a case of Rabies shall be given to the police that the animal affected shall be isolated, that weekly returns of disease shall be furnished, and that the carcases of any animals that have died of Rabies shall be destroyed. It will be observed that the law confers no general power upon the police to capture stray dogs, unless they are dangerous, or are found in the district in which, by reason of the existence of Rabies, an order has been made by the local authority, but that the order of the Privy Council permits local authorities to make such a regulation within their district.

22. The general law relating to dogs throughout the United Kingdom is laid down in the Dogs Act, 1871, 24 and 25 Vict. c. 56, which empowers an constable acting on his own discretion, to take possession of any stray dog supposed to be savage or dangerous, and detain it until claimed by the owner, who, if known, shall be informed by letter of the detention. The chief officer of the police of the district may, after the dog has been detained three clear days, if the owner is not known, cause the dog to be sold or destroyed. Courts of summary jurisdiction may make orders directing dangerous dogs to be kept under proper control or destroyed. If a mad dog or a dog suspected of being mad, is found within the jurisdiction of any local authority, such authority may make an order placing restrictions on all dogs not under control for such period as they may think fit, with provisions as to detention and sale similar to the above.

23. In 1867, the assessed tax of 12s. imposed upon dogs was by 30 Vict. c. 5, abolished, and a license duty of 5s. under the management of the Commissioners of Inland Revenue substituted therefor. This Act was amended by the Customs and Inland Revenue Act of 1878, 41 Vict. c. 15, which increases the duty from 5s. to 7s. 6d., but exempts dogs under six months, hounds under twelve months if not used in a pack, blind persons' dogs, and, within certain limits, dogs used solely to tend sheep or cattle.

24. The Metropolis is specially dealt with by the law. Under the Metropolitan Police Act, 1839, 2 and 3 Vict. c. 47, a fine of 40s. may be imposed on any person who suffers a ferocious unmuzzled dog to be at large, or urges it to attack any other dog or frighten any person or animal. Constables may destroy dogs suspected to be rabid or who have been bitten by any rabid or suspected animal, and a penalty is imposed on persons allowing such dogs to be at large. By the Metropolitan Streets Act, 1867, 30 and 31 Vict. c. 134, the police may take possession of and detain any dog not under control, and the Commissioner of Police may issue a notice requiring the dog to be led or muzzled, and may take possession of any dog found loose and unmuzzled, but if a dog wears a collar with an address on it, a letter stating the seizure must be sent to that address. The Commissioners of Police may destroy dogs after detaining them for three clear days. The police are bound properly to feed and maintain all dogs detained.

25. In Ireland, a special Act, Dogs' Regulation Act, 1865, 28 Vict. c. 50, imposes a duty of 2s. for each dog license, with a fee of 6d. for registration. And if a dog be transferred, the new owner need not take out a fresh license; but, on the payment of a fee of 6d., can obtain a certificate that the duty has been paid. And by The Summary Jurisdiction (Ireland) Act, 1851, 14 Vict. c. 92, no person may keep at large any dog within fifty yards of any public road without a muzzle, or else a block of wood fastened to its neck of sufficient weight to prevent the dog from being dangerous. The Justice of the Petty Sessions may issue an order to enable a constable to kill any dangerous dog so kept; and in the district of the Dublin metropolis, any dog suspected to be in a rabid state, or which has been bitten by an animal so suspected, may be destroyed.

26. In conclusion, we desire to express our opinion that, with some amendments suggested above in the powers conferred upon the Privy Council, and, through them, upon local authorities, the danger of Rabies may to a great extent be met, and that the exercise of those powers must be guided by the exigencies as they arise. The time may come when the public will call upon the Privy Council to act on its own authority throughout the kingdom, but without that sanction it seems prudent to leave to local authorities the initiation of necessary measures.

27. The recommendations of your Committee may be recapitulated as follows: 1, That when Rabies is prevalent the muzzle should be enforced; 2,

That the power of the police constable should be extended to authorise the slaughter of stray dogs; 3, That the symptoms of Rabies should be endorsed on dog licenses; 4, That local authorities should have power to order that dogs should wear badges which may identify their owners; 5, That in populous places local authorities should place restrictions upon dogs generally, and especially deal stringently with apparently ownerless dogs in their districts; 6, That in the event of its being conclusively proved that M. Pasteur's system provides a preventive remedy, facilities should be afforded for its application in England.

HER MAJESTY'S JUBILEE.

THE following reply has been received from the Home Secretary's Office, to the address presented to Her Most Gracious Majesty by the Royal College of Veterinary Surgeons:—

Whitehall, *Aug.* 3rd, 1887.

SIR,—I have had the honour to lay before the Queen the loyal and dutiful Address of the Royal College of Veterinary Surgeons on the occasion of Her Majesty attaining the Fiftieth Year of Her Reign. And I have to inform you that Her Majesty was pleased to receive the same very graciously. I have the honour to be, Sir, your obedient servant,

(Signed) HENRY MATTHEWS.

Sir Henry Simpson, Gordon House, Windsor.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JULY 28TH, 1887.

SIR HENRY SIMPSON, President, in the chair.

Present:—Professors McCall, Pritchard, Duguid, Brown, Walley, Robertson; Messrs. Dray, Roalfe Cox, Harpley, Fleming, Taylor, Woods, Barford, Mulvey, J. F. Simpson, Whittle, Briggs, Wragg, Santy, Storrar, Carter, Simcocks, and the Secretary.

Before taking his seat, the PRESIDENT announced that Mr. Greaves had kindly presented the College with a presidential chair, and he thought that before it was occupied for the first time, the Council would wish in some way to acknowledge their indebtedness to Mr. Greaves.

On the motion of Mr. DRAY, seconded by Mr. WHITTLE, a vote of thanks was passed to Mr. Greaves for his liberality.

The President then took the chair.

The SECRETARY read the notice convening the meeting.

Letters regretting their absence were announced from Mr. Perrins, Mr. Campbell, Mr. Greaves, and Sir Frederick Fitzwygram.

The minutes of the last quarterly meeting were taken as read, as were also the minutes of a special meeting held on July 14th.

The following donations to the library were announced—

Revue Vétérinaire; "The Annual Report of the Agricultural Department of the Privy Council Office," presented by Prof. Brown; a pamphlet on "Surra; or, Progressive Pernicious Anæmia," and a "Report on Remittent Anthrax," presented by Mr. R. W. Burke, of the Army Veterinary Department; "The Annual Report and Statistical Returns of the Army Veterinary Department," presented by Dr. Fleming.

Mr. DRAY proposed a vote of thanks to the donors.

Mr. WOODS seconded the motion, which was agreed to.

The SECRETARY read the correspondence—

(1) A reply from a Mr. Eaves, relating to the Registration Act. It was decided to take no action with regard to it until a promised second letter was received.

(2) A syllabus of the College in Bombay, sent by Mr. Steel.

The SECRETARY announced that on behalf of the Midland Counties Veterinary Medical Association Mr. Blakeway had, through Mr. Dray, presented the College with a cheque for £50.

On the motion of Mr. TAYLOR, seconded by Mr. DRAY, a vote of thanks was passed to the Midland Association for their handsome present.

The PRESIDENT stated that the address to the Queen had been sent to the Home Office. He had tried to get permission for a deputation to present it to Her Majesty in person, but of about five hundred applicants only thirty were allowed that privilege. In view of the possibility of a deputation being admitted, he had ventured to put the College to the expense of a guinea for a casket in which it might be handed to the Queen.

The SECRETARY read a letter from the Liverpool Veterinary Medical Association, forwarding a resolution passed at the last quarterly meeting, to the effect that the Association supported the Council in its determination to appoint an independent Conjoint Committee to make a thorough investigation as to the cause of the recent riots in Edinburgh.

The PRESIDENT said no such resolution was come to at the last meeting of the Council.

The communication was referred to the Examination Committee.

A letter was read from the Secretary of the North of England Veterinary Medical Association, enclosing a copy of certain resolutions, recommending that the number of Examiners should be increased to at least two for each subject, and that as far as possible each Examiner should be a specialist on the subject in which he examined.

A similar letter was read from the Border Counties Veterinary Medical Association.

Both communications were referred to the Examination Committee.

The PRESIDENT said that at the last meeting a hurried resolution was passed to have a wire gauze put in front of the stained glass window, but it was impossible to get it done before the Jubilee. He thought it would be better to pay a small sum for insurance, which could be effected for 18s. annually, rather than have the windows disfigured by wire gauze.

On the motion of Professor WALLEY, seconded by Mr. DRAY, the resolution passed at the last meeting was rescinded, and it was decided to insure the windows.

Report of the Finance Committee.

On the motion of Mr. DRAY, seconded by Mr. WHITTLE, the report of the Finance Committee was received.

Mr. DRAY said that two guineas had been received from Mr. B. J. Burnett, of Maybole, who in his letter stated that he intended to give an annual subscription to the same amount.

The motion for the adoption of the Report was agreed to on the motion of Mr. DRAY, seconded by Mr. WHITTLE, and cheques were ordered to be drawn to meet the liabilities.

Report from the Court of Examiners.

The SECRETARY read the Report of the Court of Examiners. For the first examination in London, fourteen passed and thirteen were rejected; for

the second, fifteen passed and four were rejected; in Class A thirty-five passed and fourteen were rejected.

Mr. SIMCOCKS asked what proofs were produced by those who passed the final examination of their having passed matriculation examinations.

The PRESIDENT said the matriculation examinations rested with the schools.

Professor MCCALL said for the first time at the recent examination the "A" students had to table their certificates before going in for their examination.

The SECRETARY read the report of the Examiners for the Fellowship degree.

Dr. FLEMING said that the gentlemen who had passed did so remarkably well, and he did not think the Examiners were ever more gratified with an examination; the high scientific knowledge of the candidates was very creditable.

The PRESIDENT said the Reports of the Examinations in Scotland had not been received. In pursuance of a duty imposed upon him by the rules of the College, he went to Edinburgh for the purpose of superintending the examinations, and on the whole he felt extremely gratified with what he saw. He took a look round the teaching schools, and was received most graciously by the principals. He had an opportunity of seeing some of the students, and tried to impress upon them the desirability of their endeavouring to fix their own mark upon the profession which they were about to enter, and to make it a rising and scientific profession. He was happy to say that the conduct of the students was exemplary, and he hoped it would remain so. He also had a very earnest conversation with the Lord Provost, and he felt sure that there was no desire on the part of the Lord Provost of Edinburgh to move in the matter of a new Charter for Scotland.

Dr. FLEMING assured the Council that the examinations this year were conducted in Scotland exactly as they had been for years, there being nothing whatever unusual.

The PRESIDENT said that during the whole course of his visit he never heard the slightest semblance of an unfair question asked.

Examiners for the Fellowship Degree.

Dr. Fleming, Mr. J. Roalfe Cox, Professor Duguid, and Professor Brown, were nominated Examiners for the Fellowship degree.

Professor BROWN asked whether the time had not arrived when the desirability of extending the scope of the examinations should be carefully considered. A Fellow of the Royal College should afford some sort of guarantee that he was competent to hold an inquiry into an outbreak of the disease, having at his hands all the modern methods of investigation. Science was not now what it was four or five years ago, and questions were constantly arising which could only be settled by a man who was a practical microscopist, to say the least. The term "fellowship" ought not to be restricted to the simple notion of experience and practical tact and knowledge of animal diseases; but a person holding that title should be recognised as a man who might be safely employed in a critical inquiry.

Dr. FLEMING said the subjects of examinations were fixed. Of course the scope of the examinations which Professor Brown proposed was a very extensive one, and he questioned very much if there were any practitioners in the country who would really undertake the study necessary to pass such an examination. The Council could extend the subjects if it chose, but he thought the groundwork of the present examination was a very good one, and so far as his own section was concerned, it made a very exhaustive one. If the examination was fixed too high it would become prohibitive, but when

the degree was established it was intended to be progressive. He knew good practitioners who had studied their profession from a scientific point of view, and who were anxious to become Fellows; but if a man were required to be examined very minutely into the outbreak of disease with regard to its chemical or its histological aspect, he was afraid the Fellowship degree would be ruined altogether.

The PRESIDENT thought there was nothing whatever to prevent the subject of the Fellowship Examination coming before the Examination Committee, which this year consisted of the whole Council.

Professor BROWN quite agreed with Dr. Fleming as to the Fellowship Degree being progressive; that was all he aimed at.

A ballot was then taken for the Examiners for the Fellowship degree, with the following result:—Professor Duguid, 13; Dr. Fleming, 12; Mr. J. Roalfe Cox, 10; Professor Brown, 7.

The PRESIDENT declared the first three elected.

The SECRETARY read a letter from Professor Walley, giving notice that at a quarterly meeting of the Council he would put certain questions.

The PRESIDENT moved that the letter be referred to the Examination Committee.

Mr. DRAY seconded the motion, which was agreed to.

Dr. FLEMING proposed the name of Dr. Huidekoper, of the University of Pennsylvania, as an Honorary Associate of the College.

Professor WALLEY seconded the motion, which was agreed to.

SPECIAL MEETING.

The SECRETARY read the notice convening the meeting.

The SECRETARY read the obituary.

Mr. J. SIMPSON called attention to the case of a Mr. Brooker, who was a member of the College about six years ago, but after being in practice for about twelve months he went out of his mind, and his brother had carried on the practice, and issued labels with the letters M.R.C.V.S., that brother being neither a member of the College nor a registered practitioner. It appeared to him that that was a case which the Secretary might very well bring before the Registration Committee at the next meeting.

The PRESIDENT said the Secretary could do that without a formal resolution.

Revision of Bye-laws.

Bye-law 1 was, on the motion of Mr. MULVEY, seconded by Mr. SIMCOCKS, left on the Examination Committee.

Bye-law 2, on the motion of Mr. J. SIMPSON, seconded by Mr. WHITTLE, was expunged.

Bye-law 3 was passed.

Bye-law 4 was passed with a verbal alteration.

Bye-law 5 was agreed to.

Bye-law 6 was passed with a verbal alteration.

Bye-laws 7 and 8 were passed.

Bye-law 9 was passed with a verbal alteration.

Bye-laws 10, 11, 12, 13, 14, were passed.

On Bye-law 15 Mr. SIMCOCKS said he thought that twenty members of the College were not sufficient, and he proposed that "fifty" should be inserted instead of "twenty."

Mr. MULVEY seconded the motion, which was lost, and the bye-law was agreed to.

Bye-laws 16, 17, 18 and 19, were agreed to.

On Bye-law 20 Professor WALLEY proposed the addition of the following words:—"That no Examiner shall act in any section save one."

Professor ROBERTSON seconded the motion, which was ultimately withdrawn, it being understood that it would come on better upon the consideration of Bye-law 22, and the bye-law was then passed.

Bye-law 21 was passed.

On Bye-law 22 Professor WALLEY moved:—"That no Examiner shall act in more than one class."

Professor ROBERTSON seconded the motion.

Mr. PETER TAYLOR suggested that the alteration had better be considered by the Examination Committee.

Dr. FLEMING said that if each Examiner was only allowed to take one section the expenses would be increased. The object of Examiners acting in more than one class was to make the fees of the students cover the cost of the examination.

Professor WALLEY said he was willing that the consideration of the bye-law should be postponed until the next meeting.

Professor MCCALL agreed with Dr. Fleming that it would be very injudicious to create any new system of Examiners which would entail larger responsibility and expense on the College, but that was a point which could easily be got over. There were not so very many honourable positions in the profession, and it ought to be considered a great honour to be appointed an Examiner; and if by incurring the same expense the College could have a body of twenty-two Examiners as efficient as the present Examiners, he was certain it would give great satisfaction to the whole of the profession. He would like the byelaw to read as follows:—"Not less than eleven shall be members of the Council."

Professor WALLEY said he would be very pleased to add Professor McCall's suggestion to his motion.

Professor BROWN thought it would be rather a strong measure to bind themselves down to eleven.

Professor MCCALL withdrew his suggestion.

Dr. FLEMING thought they had better defer the consideration of this bye-law until they had received the report of the Examination Committee.

Mr. PETER TAYLOR seconded the motion.

Mr. J. SIMPSON was opposed to any postponement of the discussion.

Professor BROWN moved as an amendment, "That the bye-law stand as it is, but that the last sentence be expunged."

Dr. FLEMING said he would withdraw his amendment, and second Professor Brown.

Professor Brown's amendment was then put and carried.

Bye-laws 23 and 24 were passed.

On Bye-law 25 Professor MCCALL said that a Board of Examiners had been required for three weeks in Scotland, and he thought there should be some definite time fixed.

Professor ROBERTSON understood that there was a fixed time for examination in London, namely, the last week in June. He thought there was nothing more detrimental to the students than to have to wait ten or fourteen days for the examination.

Mr. J. ROALFE COX said the special weeks were fixed.

Professor MCCALL said if the subject were taken up and decided at the next meeting he would be very glad indeed.

Dr. FLEMING said it must not be forgotten that unless there were nine students for examination there was no Board. He thought the question raised could be settled by rule.

Professor MCCALL said he could not see any objection to inserting the words, "If the College require."

Professor ROBERTSON approved of the suggestion. He regarded it as a matter of consultation.

The PRESIDENT said the Committee had come to a recommendation, "That the Christmas Examination commence on Tuesday, 8th December next; that Monday in the next whole week in March be fixed as the day for the examinations to commence in London, and in Scotland the second Tuesday in April." That would seem to show that there was a conference and that the date was fixed. He did not think that a new law was required. All that was wanted was to put the existing law in force.

Professor PRITCHARD wished to know if a pupil desired to be examined at any period of the year, and was inclined to pay the fees of the Examiners, could he demand an examination?

The PRESIDENT said he could not. The words were, "such time as the Council may appoint."

Dr. FLEMING said there must be nine candidates.

Mr. MULVEY said he would propose a new bye-law, "That no individual member of the Court of Examiners shall act on more than one section of the Board."

The PRESIDENT said if it was a new bye-law it must be suspended for three months.

Mr. MULVEY said he would suspend it.

Bye-law 26 was passed.

On Bye-law 27, Dr. FLEMING proposed that the words should run, "Pass such number of examinations as may be considered necessary."

Professor BROWN proposed to leave the bye-law out altogether. It was too restrictive.

Mr. SIMCOCKS seconded Professor Brown's motion.

Dr. FLEMING withdrew his motion, and Professor Brown's was then carried.

Bye-laws 28, 29, 30, 31, 32, and 33, were expunged on the motion of Professor BROWN, seconded by Dr. FLEMING.

On Bye-law 34, Professor BROWN said it would come better among the Rules and Regulations.

Mr. J. F. SIMPSON thought that the Council should certainly have a voice in the decision as to what age a man should be admitted into the veterinary profession, and he would propose that the bye-law remain.

Mr. J. F. SIMPSON thought that the word "completed" should be added to the bye-law, so that it should run, "That no student be admitted to the final examination for the diploma of the Royal College of Veterinary Surgeons until he shall have completed his twenty-first year."

Professor WALLEY moved that the bye-law as far as the age was concerned should remain as at present.

Dr. FLEMING said that that if the Council once asserted that a man might be competent to practise the veterinary profession when he was twenty years of age, they would at once acknowledge that their profession was easier than the medical profession, but he said it was more difficult.

The bye-law as amended was agreed to.

Bye-laws 35 and 36 were, on the motion of Professor BROWN, seconded by Dr. FLEMING, expunged.

On Bye-law 37 Professor BROWN proposed that the words, "After they have passed three successful examinations," should be struck out, and the following words inserted, "After they have passed the final examination."

Professor ROBERTSON seconded the motion, but the motion was subsequently withdrawn.

The PRESIDENT read a proposed alteration in the bye-law by the solicitor, and the bye-law with that alteration was carried.

On Bye-law 38A, Professor MCCALL said he did not see any necessity for the students requiring to petition the College. He also objected to the charge

of four guineas, and would propose that it should be three guineas, out of sympathy for the unfortunate students' parents.

Mr. WHITTLE seconded the motion.

Professor ROBERTSON did not think there was any need for the bye-law, except to fixing for the ordinary examination.

Mr. J. SIMPSON proposed that the fee should be four guineas. He thought that men should not be allowed to get into the profession as cheaply as they could learn the trade of a carpenter.

Mr. DRAY seconded the motion, which was put and lost, and the original motion was then carried.

Bye-laws 38, 39, 40, 41, 42, were expunged on the motion of Professor BROWN, seconded by Mr. PETER TAYLOR.

Bye-law 43 was adopted as proposed by the Bye-laws Committee.

Bye-law 44A was agreed to with a verbal alteration, so that it might read, "In accordance with the provisions of the Veterinary Surgeons Act."

On Bye-law 44, Professor BROWN proposed that it be expunged.

Professor ROBERTSON seconded the motion.

Mr. J. SIMPSON proposed as an amendnent, "That the bye-law stand as it is."

Mr. CARTER seconded the amendment, which was carried by the casting vote of the Chairman.

Bye-laws 45 and 46 were passed.

On Bye-law 47A, Professor WALLEY moved, "That it be not adopted."

Professor MCCALL seconded the motion.

Mr. J. SIMPSON proposed as an amendment, "That the suggested new bye-law be passed."

Dr. FLEMING seconded the amendment, which was lost; and the motion was passed.

Bye-law 47 was passed with the substitution of the word "person" instead of "student," and "he" instead of "medical gentleman."

Bye-law 48 was passed.

Professor BROWN proposed, "That all bye-laws which have been struck out at this meeting between 20 and 48, relating to the examination of pupils, be referred to the Examination Committee for the purpose of considering whether or in what way they may be embodied, either altered or not, in the Rules and Regulations."

Professor WALLEY seconded the motion.

The PRESIDENT said it all must be arranged before the quarterly meeting in October. He would try and get the rules sent round to each member of the Council.

Professor BROWN suggested that there might be a small committee to consider all these details.

The PRESIDENT thought that perhaps a small committee might have a bias.

Professor BROWN proposed, "That a sub-committee of members be appointed who might meet and draw a set of rules." Those rules might then be submitted to all the members of the Council, and sent back and reconsidered by a small committee, and when thoroughly discussed they might be submitted to the whole Committee.

Mr. WRAGG seconded the motion, which was agreed to, the Committee to consist of the President, Professor Brown, Dr. Fleming, Professor Robertson, Mr. James Simpson, Mr. Wragg, Professor Pritchard, and Mr. Mulvey.

Bye-law 49 was passed with a verbal alteration.

Bye-laws 50, 51, 52, and 53, were passed.

Bye-law 52A was passed with verbal alterations.

Bye-laws 52B, 54, 55, 56, 57, 58, 59, 60, 63A, were passed.

On Bye-law 63 the PRESIDENT said the solicitor reported that the Council had no power to make such a bye-law.

On the motion of Professor WALLEY, seconded by Mr. WHITTLE, the bye-law was rejected.

Bye-laws 64, 65, 66, 67, 68, 69, and 70, were passed.

Bye-law 71 : The consideration of this bye-law was adjourned.

Bye-laws 72, 73, 74, 75, 76, and 77, were passed.

On Bye-law 71, Mr. J. SIMPSON said he found that 500 Registers had been printed at a cost of £45 18s. If the printer had been in the habit of sending a certain number of Registers to the College for the use of the Council and had retained others for sale, some credit should appear for those that had been sold.

The SECRETARY said he thought the publishers had sold something like £16 worth during the year.

Dr. FLEMING suggested that the subject be referred to the House and Finance Committee.

The PRESIDENT said the Register last year cost £30, and he really thought if they wanted 500 copies they should be kept at the College, to be obtained on application to the Registrar.

This was agreed to, and the bye-law as altered was passed.

Mr. SANTY placed before the Council two designs for a window. The Norfolk and Eastern Counties Veterinary Medical Association and the Lincolnshire Western Counties Association wished the Council to decide which design it approved of.

On the motion of Mr. J. SIMPSON, it was decided to have a list of the members of the Council and of the Committees printed and circulated amongst the council and the chairmen of the veterinary medical societies annually.

Mr. WHITTLE proposed, and Professor WALLEY seconded, a vote of thanks to the Chairman, which was agreed to.

NATIONAL VETERINARY ASSOCIATION AT PETERBOROUGH.

PETERBOROUGH having been chosen for the 1887 meeting of the National Veterinary Association, the meeting was held in the Theatre, Park Road, on August 10th and 11th. The president of the society for the year was Mr. J. Mackinder, F.R.C.V.S., of Peterborough. Accompanying the meeting was an exhibition of medicines and appliances, etc., used in veterinary practice, and this was held in the first half of the theatre, and created much interest. The conference opened at ten o'clock on the 10th, when there was a large number of delegates from London, Grantham, Doncaster, Sleaford, Market Harborough, and representing various counties, Lancashire, Leeds, Midland, North Eastern, Yorkshire, Norfolk and Eastern Counties, the Southern Counties, West of Scotland, North of Ireland, etc.

The report and accounts having been read and adopted, Mr. J. MACKINDER delivered

The President's Address.

During his address he said that he could not claim for Peterborough the distinction his predecessor in the office did for Edinburgh in its relation to the profession, but he could say that it was the centre of a district noted for the excellence of its horses, the truth of which none would doubt who had visited the shows held yearly in its precincts. But for all that he sincerely trusted that the results of the meeting would not fall short of any previous one, and in the name of the veterinarians of this city and district he bid them welcome. (Applause.) Many members of the profession seemed to doubt the desirability of joining any of their local veterinary medical associations. He would point out to them that we were living in an age of combination. There was no trade or profession that had not endeavoured by

congresses, etc., to discuss questions relating to their particular calling in life, remembering that in the multiplicity of counsel there was wisdom. (Hear, hear.) How many day by day did not see cases upon which they should welcome an interchange of ideas with their fellow practitioners? For many years there seemed a feeling of hesitation and a kind of doubting their brethren in the profession, and had not the different associations done much to remove this feeling and join them together in new ties, so that they might look at their diplomas and seeing the motto, "Vis unita fortior," feel that by this meeting they were making that motto a reality and not a sham. (Applause.) In taking a retrospect the President remarked upon the splendid results brought about by such gatherings. Twenty years ago it was said by a member of the Government that very little seemed to be known as to contagious diseases. At one time Pleuro-pneumonia was one of the most common diseases, now, although the disease has not been stamped out in many localities (due in his opinion to the lax way the law was carried out), in this district a case of the kind was one of the most rare they had to do with. Foot-and-mouth Disease they were first told was impossible to be stamped out. Now the country was entirely free, providing that what the veterinary profession recommended as a body could be carried out. Sheep-scab was now a rarity, where formerly it was very prevalent. Glanders and Farcy were now only prevalent in the larger towns, where it prevailed owing to the obstruction by low-class dealers and bad sanitary arrangements of stables. Swine-fever was one of the diseases they were now coping with, and he was sure if the legislative enactments were carried out properly by all local authorities it would soon disappear. (Hear, hear.) Speaking of Anthrax, the President said it would greatly simplify matters if the local authorities in publishing orders, placed in the margin the name it was locally known by, otherwise it was mistaken for a new disease. He believed inoculation not practicable (hear, hear), and thought power should be given to a qualified veterinary inspector to slaughter all beasts he might consider liable to the contagion, giving the owner full compensation. In Rabies they ought not to be led by a false idea of cruelty (hear, hear); but it must be compulsory on all local authorities to order all dogs to be muzzled. A certain class of people might cry out against it, but were the public at large to suffer on account of sentimental persons having pet dogs, whose comfort they considered before the lives of their fellow creatures? (Applause.) He again extended to the delegates a hearty welcome to the city of Peterborough.

The Conferences.

The outcome of the first discussion on the morning of the 10th, was the selection of Newcastle-on-Tyne for the next annual meeting. Mr. Wragg was re-elected treasurer, and Mr. J. A. Banham, Cambridge, secretary. Mr. Banham read an essay on "Shoeing," the discussion upon which was opened by Mr. W. Hunting in an address of some length. Mr. Barker, Mr. McGagin, Mr. Rutherford, Mr. Edgar, and Prof. Walley took part, and the subject was adjourned until after luncheon. This was admirably served in a marquee at the rear of the Pavilion Hotel. Captain Hayes, London, afterwards gave a practical illustration of different methods of training horses and getting them under complete control. He operated with success on an unbroken colt which had never been backed, and was returned as incorrigible after being a fortnight at the breaker's. On the resumption of the conference, Mr. Kidd re-opened the discussion, and he was followed by Prof. McQueen. Mr. Banham replied upon the debate. Mr. Hardy proposed a vote of thanks to Mr. Banham, which was seconded by Mr. Barford, and carried. Professor Walley then introduced a paper on the best method of despatching horses, and discussed the various systems of chemicals, poleaxing, pithing, and bleeding, and concluded in

favour of shooting. Capt. Russell, of Grantham, opened the discussion, and it was continued by Prof. McGill, Messrs. Hunting, Rutherford, and F. Smith (Army Vet. Dept., Aldershot). Prof. Walley replied. The following resolution was unanimously agreed to: "That only properly qualified and experienced men should be allowed to take the life of horses, and that death by gunshot is deemed the most efficacious and merciful mode of despatch." Mr. Santy, of Norwich, moved a vote of thanks, which Capt. Russell seconded, and it was carried. This closed the day's conference. The delegates met again on the morning of the 11th in the Theatre, under the presidency of Mr. J. Mackinder. There was a good muster. Amongst the questions upon the agenda for discussion were, "Fatal Diseases of the Digestive Canal of the Horse," by Mr. F. Smith, A.V.D., the discussion being opened by Mr. R. Rutherford; and "Overstocking the Udders of Cows and Dishorning of Cattle," by Professor Walley. The discussion was opened by Mr. W. A. Edgar. The routine business of election of officers, etc., was proceeded with. One of the events of the meeting was the election of Professor Walley to a vice-presidency for life. The President paid a tribute to the intellect of the Professor, and the election was received with enthusiasm. Professor Williams, of Edinburgh, was unanimously elected the new president.

The Dinner.

In the evening the dinner of the Association was held at the Angel Hotel. The President occupied the chair, and the Mayor, several of the local magnates and medical men, and a large number of the members of the Association, were present.

Among the exhibits made during the meeting, Messrs. Arnold and Sons, of London, had a tastefully set out collection of all the latest inventions in veterinary instruments and appliances, amongst which were the following novelties:—

Dr. Fleming's new veterinary battery, with four Léclanché cells for treatment of Roaring, similar to one being used on the Duke of Westminster's Ormonde; Pasteur's new trephine, with a series of drills for inoculation; Prof. Robertson's neurotomy case; miniature needle holder, for facilitating the introduction of needles; new apparatus for producing anæsthesia per rectum; Brett's improved ecraseur, with brass cup for vaseline which renders the screw always easy to work; Prof. Robertson's revolving pyropuncture iron, constructed so that any number of points may be heated and used; intra-tracheal injection syringe, for the cure of lung-worm, etc.; patent hypodermic syringe, with self-lubricating plunger; collection of clinical thermometers, parturition instruments, etc.

CENTRAL VETERINARY MEDICAL SOCIETY.

THE meetings held on the 5th May and the 2nd June were occupied by the reading and discussion of an essay introduced by Mr. F. Raymond, A.V.D., on the subject of chloroform.

The following Fellows attended: Messrs. A. Broad, J. Broad, Arthur Broad, J. Roalfe Cox, F. Elworthy, W. Hunting, W. S. Harrison, G. A. Herron, T. Moore, F. T. Oatway, Professor Pritchard, James Rowe (President), F. Raymond, W. Roots, W. Irwin Roberts, F. G. Samson, J. F. Simpson, C. Sheather, J. Woodger, F. W. Wragg, and W. Willis.

The following is the essay:—

MR. PRESIDENT AND GENTLEMEN,—In bringing the subject of chloroform as an anesthetic to your notice, I do so on account of the comparative poverty of its veterinary literature, and also because ample time has passed since

Professor Williams' and Mr. Roberts' most interesting publication on the agent.

Doubtless many of the suggestions which were made at that meeting of the National Veterinary Medical Society have been acted upon, so that I venture to entertain a hope that the Fellows will place on record, during the discussion, many new and interesting facts which have come to their notice since Professor Williams' and Mr. Roberts' paper was read.

The history of Anesthesia dates very far back, for there is reason to believe that the ancient Egyptians used Indian hemp for the purpose. As history approaches us we occasionally hear of the employment of some drug for the purpose of narcosis or to deaden pain.

Thus in Christ's time mandragora wine was given to criminals to deaden the agony of crucifixion, and later on in Dante's period a few Italian surgeons are reported to have caused anesthesia by inhalation from a preparation of deadly nightshade, hyoscyamus, mandragora, and hemlock.

During the commencement of the eighteenth century one of the kings of Poland was narcotized to undergo an amputation ; and so on until 1799, when Sir Humphrey Davy hinted at the advantage which might accrue from the use of nitrous oxide. This brings us down to 1844 when Horace Wells, an American dentist, administered ether successfully. In 1847 Mr. Jacob Bell substituted chloric ether for sulphuric ether.

Chloric ether is practically a solution of chloroform in spirits of wine.

But it is interesting to notice that while scientists were carefully feeling their way, the ignorant peasants on the Continent, particularly in Norway, had made themselves acquainted with the anesthetic properties of a class of somewhat similar compounds found in ants, namely, the "Formyle" compounds. Dr. Sansom states:

"I have heard of crushed ants having been employed to allay local pain.

"In Norway the common beverage of the lower classes was in former years spirit, in which a large bag of large white ants was boiled and left to simmer.

"The effect of this drink was rapidly to produce a delightful dreamy condition, which soon passed into complete unconsciousness, from which it was impossible to rouse the tippler. In the course of an hour or two the individual recovered, and was found to be perfectly clear-headed, without headache or other discomfort. Surgeons were accustomed to perform operations upon those whose sensibility to pain had thus been removed."

I myself recollect some years ago seeing an old woman some miles from Berlin collecting ants and putting them in a bottle with vinegar and water. I was told the lotion was good for sprains.

The list of anesthetics is a very long one, comprising more than fifty agents, but I wish to draw your attention more particularly to chloroform.

Chloroform.—The French chemist Dumas, I believe, was the first to recognise the true nature of chloroform, but about the time he did so Mr. Waldie, of the Apothecaries' Hall, Liverpool, separated chloroform from chloric ether, and Sir J. Simpson was the first to administer it in surgery in 1847. Chloroform is generally prepared by the distillation of alcohol with chloride of lime. When pure, it is a transparent colourless fluid, with a penetrating odour, and sweet fiery taste. It decomposes when exposed to air and light, forming chlorine and hydrochloric acid, and becomes unfitted for inhalation. Great care should therefore be taken to keep it in a coloured bottle, well stoppered. It is very necessary that none but pure chloroform should be used. Dr. Turnbull states that commercial chloroform has become much less reliable and more dangerous of late years. Too much importance cannot be given to this part of the subject, as impure chloroform will sometimes not act, and at others has nearly caused death. It also gives rise in the human subject, and

probably also in the lower animals, to great distress, such as headache, vomiting, extreme exhaustion, and so on.

I hope, therefore, I may be allowed to enlarge somewhat upon the impurities of the drug. The principal impurities are alcohol and ether, which reduce its strength; methyl compounds, resulting from the employ of methylic instead of rectified spirit in distillation; and, thirdly, the products of decomposition.

To test for alcohol, add a drop or two of the suspected chloroform to white of egg. If alcohol is present the albumen coagulates; if the chloroform is pure no change takes place. This test will detect 2 or 3 per cent.

If pure chloroform be allowed to drop into distilled water there is no disturbance of the transparency of the water, but if it contains alcohol the water becomes milky.

To test for ether, drop some of the suspected chloroform into an aqueous solution of iodine. If the chloroform is pure, the drop remains transparent, or of a violet or amethyst colour. If it contains ether, the drop is coloured dull red.

To test for methyl compounds, add to the liquid, concentrated sulphuric acid; if impure a black precipitate is thrown down.

I have already hinted that the most dangerous products of the decomposition of chloroform are chlorine and hydrochloric acid. Hydrochloric acid may be detected with blue litmus, which it turns red, and by solution of nitrate of silver, which causes a precipitate. Free chlorine may be discovered by its smell; it also bleaches litmus.

Chloroform acts far more powerfully when inhaled, than when poured into the stomach. When it is inhaled, it becomes absorbed by the capillaries of the lungs, goes to the left side of the heart, and thence into the general circulation; but when taken into the stomach it passes through the portal system, thence through the vena cava to the right side of the heart, then to the lungs, where the greater part is exhaled. What remains returns to the left side of the heart, and through it into the general circulation.

Therefore, as Lyman points out, the production of anesthesia by chloroform in a fluid state is slow and uncertain. Taylor, in his work on poisons, mentions the case of a man who swallowed four ounces of chloroform and recovered in five days.

In administering the vapour of chloroform it should be borne in mind that it has a local as well as a general effect, and no doubt considerable discomfort may be produced by allowing the liquid to fall upon the mucous membrane of the nostrils.

There is an interesting question connected with the administration of chloroform, upon which I am anxious to take the opinion of the meeting. It is as follows:—In administering chloroform, is it better to give the vapour without air as recommended by Mr. Roberts, or to give it with air?

The late Paul Bert, who experimented largely with the agent upon dogs, found that if submitted to the vapour of six grammes of chloroform in 100 litres of air, the animals died slowly in about seven hours and a half; sensation was not lost, but enfeebled. If stronger doses were given, say ten grammes to 100 litres, death was rapid. The general conclusion he appears to have arrived at is, that 100 litres of air must contain the vapour of fifteen grammes of chloroform to produce anesthesia, and of thirty grammes to produce asphyxia.

Lyman, the American chloroformist, says:—"A knowledge of these facts renders it easy to comprehend the manner in which death has often been observed as the immediate consequence of a fresh charge of chloroform upon the inhaler. If the patient has been breathing air charged with chloroform in the proportion of 25 grammes to 100 litres, a very small addition will be

necessary, in order to reach the asphyxiating point, and death may occur suddenly without any accompanying symptoms of excitement, because all power of muscular movement has been effectually abolished by the previously established condition of profound anesthesia."

Some time ago, a Committee of the Royal Medical and Chirurgical Society carried out some experiments, with the following results:—

If concentrated chloroform vapour was suddenly administered by the mouth, a spasm of the fauces is induced, which lasts some seconds; afterwards, when the animal has inspired, the phenomena of asphyxia are for a time associated with those of chloroform poisoning. If partial insensibility be first induced by weaker chloroform, no spasm of the fauces ensues upon a later administration of the concentrated form of the agent.

Dr. Sansom's opinion is as follows:—

"(1) In all cases of experiments upon animals, the symptoms of anesthesia have been induced in the most regular, uniform, and safe manner, when fully diluted vapour has been administered.

"(2) In experiments upon the condition of the circulation in narcosis, we have always found highly charged atmosphere cause great trouble of the capillary circulation, whilst diluted atmosphere has, as it were, allowed the gradual accommodation of the system to the new state."

We know by practical experience that an atmosphere strong in chloroform vapour causes in the human subject phenomena of resistance, and the most apparent signs of danger.

He goes on to say: "In the human subject I have found that if the inhalation be commenced with so small a proportion of chloroform that the patient can recognise in it nothing unpleasant, and if this proportion be gradually increased, there is the most perfect absence of signs of danger, and of muscular excitement.

"Commence the inhalation gradually; recollect that any sudden increase in the strength of the vapour can produce sudden syncope."

We have considered that the means to be adopted to diminish and nearly abolish the danger of chloroform are (1) free dilution; (2) gradual administration.

Professor Underwood remarks: "The essential element of safety during inhalation of chloroform is that it should never be administered above a certain strength. To experiment, therefore, with a saturated atmosphere is simply to experiment with a poisonous dose. Chloroform is not specially dangerous unless given with too little air, when it may suddenly depress the heart."

It will be gathered from what I have quoted that strong chloroform vapour is never used in human surgery. In my opinion, which I give for what it is worth, having never had the courage to use concentrated vapour, it is equally dangerous in our practice. On the other hand, we have the evidence of Mr. Roberts, which I quote below, and which must be received with great respect, for it must be borne in mind that his recommendations are based upon actual practical evidence.

Mr. Roberts states:—"The plan that I have followed is, first, to secure the horse's head, having a good halter on each side, securely fastened, so that he cannot slip them off. A good strong assistant, having hold of each halter, is necessary, as, during the period of excitement, the animal may be rather boisterous, and, if not securely fastened, may get away. I then place the nosebag, containing a sponge, on the horse's nose. This is fastened by a strap, which passes over the horse's head, the same as an ordinary muzzle. The nosebag itself has no holes punched in it for the admission of air. When this is done, I pour into the nosebag two ounces of chloroform, and immediately plug up the space around the top of the nosebag and the horse's

face, thus preventing, as much as possible, the admission of air. In Mr. Finlay Dun's work it is recommended that twenty parts of air to one of chloroform he admitted during inhalation, but I find this not necessary. I have put under the influence of chloroform some scores of horses and cattle, and have found it quite safe to exclude the atmosphere as far as I possibly could, and cause them to inhale nearly pure chloroform vapour."

It is to be supposed that Mr. Roberts has been invariably successful, for he does not mention any fatal case.

Since Mr. Roberts' paper was published, other gentlemen may have attempted his method; if any of them are present, their opinion would be very welcome. I should particularly like to know if any untoward occurrences have taken place. Does the animal ever injure itself or the assistants? Does it break away from them, and, if so, what occurs? Supposing it becomes necessary to add more chloroform, is there any difficulty in doing so, owing to the struggles of the horse? Is Mr. Roberts' method practicable in confined spaces—in a London yard, for instance?

The experience I have gained in employing what may be called the old method leads me to make the following suggestions:—

I think the best time to administer chloroform is about 10 a.m., the patient having received half a feed of corn at 7 a.m. and no hay. Before the animal leaves the stable, it is advisable to examine the heart, lungs, and pulse. Medical chloroformists do not appear to attach so much importance to symptoms of cardiac weakness as formerly, for there are many cases recorded where persons with feeble hearts have safely undergone operations under chloroform. Perhaps there is more danger attendant upon a diseased state of the lungs. However that may be, it is advisable to auscultate, so that extra care may be taken in case anything abnormal appears about the chest. The horse is then led out and cast. I would recommend that throughout the entire operation all unnecessary noise, confusion, and talking be avoided. It has been noticed in human surgery that loud talking and noise of any kind prevents the patient going off as quickly as would otherwise be the case. I think I have more than once noticed something similar in horses. It has occurred when I have been about to operate upon a patient which I thought was sufficiently under chloroform for my purpose that, just as I was about to make an incision, a non-commissioned officer would warn the men by saying, in a somewhat impressive voice, "Steady." The men would perhaps tighten the ropes, and perhaps move a little, with the result that the horse would begin to struggle, which it had not done before, and more chloroform would have to be given.

I therefore strongly advise absolute quiet. Having got the horse down I feel for the pulse, while the assistant puts a towel over the horse's face without covering the eye and places on my left hand (supposing the horse is on its off side) a vessel, generally a small mortar, with three ounces of pure chloroform, and a sponge a little larger than my fist. I slip the sponge under the towel and apply it gradually to the lower nostril. My hand is kept on the pulse, and I watch the eye.

If the pulse gets weak, or any other untoward symptom becomes apparent, the sponge is withdrawn somewhat, or if necessary taken away altogether for a short time. When the untoward symptoms have passed off, it may be re-applied.

It very often occurs that three ounces are not sufficient to bring about the desired effect rapidly; it is then necessary to add more. In doing so care should be taken, because, if carelessly done, accidents may occur. When the original amount has evaporated, and the sponge is removed for more, the horse's respirations are liable to become deeper. Now, if a strong dose is suddenly applied while the deep respirations are going on, an over dose may

be inhaled and something untoward may happen. It is, therefore, advisable that after replenishing the sponge, it should be re-applied gradually, and not at once thrust in close proximity to the nostril.

Having once got the animal under chloroform, comparatively little of the drug is required to keep it there.

The operation over, I remove the hobbles, but do not otherwise disturb the horse, which is allowed to come round in its own time. The animal is not allowed to rise as early as it may wish, but a man's foot on its neck is sufficient to keep it under restraint for some time longer. If it rises too soon it is sure to flounder about, and perhaps injure itself by falling again. When I consider the horse may get up with safety, one or two men are stationed on either side to support it, and prevent its reeling about. After standing a short time the horse is led into a box, and if the nature of the operation permits, it is bedded down and left alone. Formerly, I dashed cold water on the horse's head, but have long since ceased to do so, except in special cases, because it seemed to upset the patient, and made it attempt to rise before it was fit.

I am strongly of opinion that the chloroformist should have nothing to do with the surgical operation, but should devote his entire attention to the administration of the anesthetic. In everyday practice, however, this would probably be difficult to attain.

The different stages of anesthesia from chloroform have been tabulated as follows:—

1st. Stage of giddiness.
2nd. Incipient anesthesia.
3rd. Sensory paralysis.
4th. Total paralysis.

I think the above holds good in the case of horses.

The first effect upon them seems to be fright or curiosity. Sometimes the horse will at once struggle violently and fight against it; at others it will inhale deeply, as if it rather liked the smell but could not quite make out what it was. The next stage is one of excitement; the pulse becomes frequent, the breathing increases, the eyes begin to roll, and, as a rule, agreeable thoughts begin to pass through the patient's brain. They often neigh—go through the process of mastication.

Stallions often show erotic phenomena, but I have not observed them in mares. They probably, however, occur, for in woman they are not at all rare, and have led to considerable unpleasantness—in fact, more than one operator has been nearly ruined in that way.

In the next stage the excitement increases, the eye still continues to roll, the breathing becomes regular and slower, the pulse full, regular, and slower than at first, but faster than normal.

In the last stage the other symptoms are about the same, but the eye ceases to roll, and the pupil dilates, and the eye is senseless to the touch. While in this stage any operation can be performed without causing movement. Towards the end of the last stage but one, operations will not cause pain, but slight movements may occur from reflex action.

Chloroformists ascribe death from chloroform to different causes.

Thus Dr. Turnbull reports that death usually occurs from asphyxia, owing to closure of the glottis, or to paralysis of the laryngeal muscles; or it may be induced by cardiac syncope, or absorption into the blood or nerve tissue, producing entire alteration of the nervous tissues.

Schiff.—"Chloroform can paralyse the heart and blood-vessels at once, without previously paralysing the respiration."

Benjamin Richardson states from experiments on rabbits:—

"The cause of the fatality from chloroform does not occur, as was first supposed, from any particular mode of administering the narcotic.

"That chloroform will kill, in some instances, when the subject killed by it exhibits, previous to administration, no trace of disease or other sign by which the danger of death can be foretold.

"That the condition of the air at the time of administration materially influences the action of the narcotic vapour; that the administration is much less dangerous when the air is free from watery vapour, and the temperature is above 60°, but below 70° F.

"That there are four distinct modes of death.

"That so long as chloroform continues to be used there will always be a certain distinct mortality arising from it, and that no human skill in applying it can divest it of its dangers."

Dr. Sansom states: "Death in the human subject may occur—

"(1) By spasm of the heart. In this case the heart is found after death contracted like a solid ball. This form of death is rare. I believe it to be an aggravation of that influence upon the sympathetic nerves which in the exhibition of narcotics causes contraction of the arteries and capillaries.

"(2) By paralysis of the heart—paralysis of the sympathetic nerves. In such instances in animals, we have found a sudden dilatation of the walls of the arteries and capillaries. This is the usual form of death from chloroform in man, and it is this form which is aggravated by so-called idiosyncrasy.

"(3) By palsy of respiration—by suffocation. Such has been observed in instances of congestion of the lungs.

"(4) By coma—by the profound action of chloroform. This is the only case in which death may be said to be purely and simply by chloroform."

Owing to the entire dearth in our literature of records of death from chloroform, I have had to have recourse to medical statistics.

I am not in a position to state whether this dearth is due to the rarity of the use of chloroform in our profession, to the extraordinary success which accompanies its administration, keeping the death-rate at zero, or to the dislike we have to record our disagreeable experiences for the benefit of our brethren.

You have heard just now that most authors find no difficulty to lay down causes of death in the abstract, but when statistics are referred to, it is noticed that there *is* a difficulty in finding out the exact cause in single cases. I will not trouble you with a number of statistics, but will merely point out that in 210 cases recorded by Turnbull, fifteen are ascribed to collapse, six to disease, two to asphyxia, four to shock, but of the remaining 183 cases no cause for death is given beyond, of course, the record that they died under chloroform. Lyman gives 393 fatal cases, which I have not had time to tabulate; but there is almost always a want of definite cause for death. In my own practice I have had one fatal case—a horse with a tumour. The horse was to have been cast, but was sent to me instead for operation on the kill or cure principle. The animal died just as I began the operation. *Post-mortem* showed that the lungs were very slightly congested; scarcely at all. The blood was tarry, and had a peculiar odour; the organs were healthy. I naturally *thought* a great deal over this case, and have arrived at the conclusion that the patient died of paralysis of the heart.

A paper on chloroform would be wanting in completeness if a few remarks were not added as to the best antidotes to be employed in case of accidents with the drug.

I propose, therefore, to make a few suggestions, but my ideas must be taken for what they are worth, because I have not had an opportunity of putting them into practice.

They are offered more with a view to raise a discussion, and draw forth the opinions and practical observations of others.

It is of the greatest importance that the operator should always bear in mind that accidents will happen in using chloroform, and that before giving it he should make up his mind what to do in case anything should go wrong. It is advisable that he should have by him the antidotes and means which he considers best, for when death does appear upon the scene it takes hold of the patient so quickly that there is no time to run to get remedies.

If the surgeon has got the remedies at hand, he will be cooler and more confident when the crisis occurs.

Fatal cases are caused by stoppage of the respiration or of the circulation, but generally of both simultaneously. The remedies which are most likely to re-establish these functions are, artificial respiration by intermittent pressure on the thorax, vigorous hand-rubbing of the body, particularly of the extremities, tracheotomy in cases of spasm of the glottis. Cold water dashed on the head and in the rectum will often produce a gasp, which may be followed by gradual re-establishment of the respiration.

As regards antidotes, the following have been used successfully in the human subject.

Nitrate of amyl, which in horses I would suggest might be applied in a twenty to sixty minim dose, in the form of a spray or on a piece of rag to the nostrils.

Hypodermic injections of atropine have been successful in mankind, when all else has failed. Perhaps in horses 1 to 1½ grains might be useful.

Aromatic spirits of ammonia has also met with success.

In the case of smaller animals, such as a dog, I would suggest that it be held up by the hind legs, and the tongue drawn well forward.

I have ceased using chloroform alone in my operations, and administer morphia before casting. I tried this in consequence of seeing some observations in Professor Williams' paper to the National Veterinary Association.

The combination has acted most satisfactorily. The quantity I use varies from eight to ten grains in solution, injected subcutaneously. I inject it about fifteen to twenty minutes before casting the horse.

The advantages are that the horse is quieter to cast, does not struggle so much when down, does not struggle so much while the chloroform is being administered, and does not require so much chloroform. I have not found that the patient is more difficult to revive after the operation.

I have now brought my paper to a conclusion, gentlemen, and in thanking you for the patient attention with which you have listened to it, I venture to express a hope that the discussion which will now follow, will make good some of its many imperfections.

The discussion of the subject was then commenced.

(*To be continued.*)

ARMY VETERINARY ASSOCIATION.

(*Continued from p.* 129.)

In the organisation of methods of segregation for various diseases, in directing with success the execution of practical sanitation in and about these sanitaria of encampments, in maintaining them intact and in perfect working order; in arranging for feeding and treating, and the ultimate disposal of the cured, the incurable, and the dead, under the complicated conditions that existed along the lines on the peace side of the frontier during the last war, you will see a task that was never completed, never a success, and a task that never will be until veterinary sanitary science is better recognised in India, and until more inspecting and executive veterinary surgeons are placed in action, with ample and qualified and reliable subordinates, and with legal

authority to destroy cattle. So far, however, as India, in the direction of Afghanistan, is concerned, we must credit the railway extension as a vast and satisfactory sanitary influence against the spread of disease along hundreds of miles of road, and over many square miles of country bounding it; at the same time, railways in their own way, unless carefully disinfected, contribute their share to the spread of disease.

Those who remember what it was to work those lines, encampments, posts, villages, and base hospitals, will, at any rate, recognise how much animal life, labour, and money will have been saved by extending the railroad.

Presuming the veterinary surgeon, with a regiment four or five hundred miles from the frontier terminus of the railway on which his charge is shortly to travel, has gone carefully through his horses; rejected as useless for active service the young and untrained, the known weak ones, and with some exceptions, those over thirteen years of age; that he has minimized—consistent with efficiency—all veterinary and farriery arrangements; induced his commanding officer to leave behind every grass cutter's pony, he (the veterinary surgeon) will find ample and useful occupation on the railway platform during the process of entraining, tendering advice, and taking steps calculated to save his charge many injuries, and himself much subsequent trouble. Guided by a former experience, or perhaps by tradition, he will advise against the use of the ordinary service nose bag for feeding from, whilst the train is in motion and when horses are under new and exciting conditions; for the practice is dangerous, and has been known to cause one per cent. of choking, and one-fourth per cent. of deaths. His supervision will be useful, especially during the first and earlier stoppages, and until the horses have quieted down to their unusual experiences.

Mention need hardly be made of the numerous practical suggestions the thoughtful and conservative veterinary officer may make at these times, and also during detraining, to maintain the efficiency of his charge. The first and earlier marches after leaving the trains, before his men and horses are settled to their work, will afford him opportunity for the continuous exercise of his experience, ingenuity, and resource—that is to say, on the lines of preventing casaulties from carelessly put on kits and badly fitting gear.

In fact, on the line of march, the veterinary surgeon must act the part of a detective, and insist on having rectified at once that which, if neglected, may require months to cure. As a matter of course he will have some concern in selection of camp sites, and all other matters having a hygienic bearing upon his charge. If the railway terminus be on the border of the country to be invaded, the opportunity will now arise for the selection of regimental from amongst the general transport here accumulated. Former experience with this class should stand us in good need, for time is pressing, every body for himself, and on the alert to secure the best animals. The veterinary surgeon must here be smart, not only to select, but to reject, even so late, those animals which are likely to knock up within the first week.

His charge will now be increased by five or six hundred ponies, mules, camels, and bullocks, and it will be his special mission to keep the lot in working and marching order—a very large order indeed, it is true, and only to be successfully accomplished by incessant personal inspection and direction, trusting no one who is not proven.

A thousand casaulties not amounting to injury may be nipped in the bud by a steady uninterrupted attention to minor matters, the veterinary surgeon thuswise minimising his own duties and sick list, and maximising the effectiveness of his charge, and considerably contributing to keep it in the front rank for real work.

The change of bearing that pack saddles and other gear assumes under pressure of loads, and when animals lose fat or condition, must ever be

provided against, and for this reason the saddler should accompany the veterinary surgeon on all important inspections, and write down his suggestions.

Grooming is especially necessary to the weight carrying surfaces of draught and pack animals, for it is a means of ensuring the daily removal of saddles and gear, as well as the accumulations of dirt, dried perspiration, and matted hair, which together soon act as foreign agents, and hide the abrasions and wounds it is so desirable to notice and attend to early.

Camel-drivers are prone to leave the saddles on their camels for days, a fruitful source of injury and malsanitation; if not groomed, the camel's hair should be frayed out by rubbing with a blunt stick, to get out dirt and perspiration.

With camels, as with the rest of transport, the personal working veterinary surgeon will be the most important factor in maintaining them in working order. It will often be found most desirable, nay, compulsory, to keep them at work, though they may have wounds and bruises about weight carrying surfaces; but here his practical ingenuity will suggest the necessary adaptations and alterations of gear and also the means—medical, surgical, and otherwise—that shall keep them at work, with the least possible suffering.

A very short negligence of manual examination will soon disclose to the veterinary surgeon the evils likely to arise.

As I dare say you are aware, it is customary in Northern India for cavalry and artillery to employ ponies—in the proportion of one to two horses—to carry in the grass cut by its owner. For European cavalry and artillery the system, even in India, might, with advantage, be abandoned. It is a charge of which the Government takes no cognisance, but it requires more supervision from the veterinary officer to keep it in working order, and free from injuries and diseases, by reason of their wanderings, work, and bad management, than his own legitimate charge.

On active service in Afghanistan, the system was a decided failure. In an enemy's country like that, the grass-cutters' ponies were of little use—indeed, actually became a burden to their owners and the service, until they died of starvation and cold. It was impossible for the owners to feed and clothe them, and they could not always be taken out to pick up the living they had no other means of getting. Moreover, in this campaign, it was much easier to feed men than animals, and for this reason it would have been better to employ one grass-cutter per horse, than one grass-cutter with a pony per two horses.

Should these animals be taken, the veterinary surgeon will accept the position and make the best of it for his own sake, and for that of his regimental charge, if not for its own; will frequently and carefully inspect them, their lines and surroundings, their feeding and general management, and be especially suspicious of their introducing parasitic mange. Native cavalry are believed to employ them with more success, but they are part and parcel of the trooper's property, and supposed to be the only transport of two mounted men on service. Though a personal interest should in this case place the system in the best possible position, it never has the care and development that it requires to make it perfect.

You will excuse my enlarging on this topic, but a long experience makes the complaint justifiable. When the sixth Dragoon Guards took over the horses of the eleventh Hussars in 1878, some of which were then isolated under suspicion of Glanders-Farcy, 185 cases of Mange in the grass-cutters' ponies of that regiment had also to be taken over and treated. Some were so emaciated that they could not stand, and others utterly destitute of hair, whilst some had to be destroyed. Half the grass-cutters' ponies with the Carabineers in Afghanistan died from starvation and cold.

In camp, etc., whether temporary or permanent, the veterinary surgeon is a man of action and importance; his knowledge of hygiene, veterinary and otherwise, and of the necessity of thorough camp sanitation, affords him incessant opportunity to apply himself practically and successfully for the benefit of man and beast, Many matters which will not strike the new sanitary officer will force themselves on the notice of the veterinary hygienist, for correction.

Hired transport is always a source of trouble, because of the difficulty of controlling it for treatment and supervision; moreover, the authorities are very slow to sanction the destruction of animals whose owners have subsequently to be compensated. Slaughter cattle—alive and dead—come under the veterinary surgeon's observation, as well as the milch cattle that always follow armies into Afghanistan. The owners of these cattle have a cruel practice of forcing a stick covered with rag into the os uteri of the cow, to increase, by its irritation, the milk supply; and they also inject salt and water into the vagina for the same reason. These atrocities, which are punishable offences under the civil law in India, are punishable by martial law on service, but it is only the veterinary surgeon who will be likely to bring this to notice.

A filthy custom too prevails, of feeding the milch cattle on the fresh droppings of horses, and, unless prohibited, through the report of the veterinary surgeon, the herd will be seen every morning on the manure heaps, feeding upon equine excrement.

The practical veterinary surgeon works out every resource the invaded country affords in the way of foods for the healthy and sick, utilises the water-mills for food preparation, and turns all local appliances and medicines to his own purposes and to the benefit of his charge.

Though the clothing of horses and other animals in all countries is a question of transport, it is also a question of necessity, and a particularly pressing one in Afghanistan. With the advent of November, or earlier, its value is soon forced upon those who desire the conservation of animal life. Without clothing, no class of trooper or transport will long survive the effects of cold, and though the animals that carry the clothing from place to place may be the very means, whatever precautions be taken, of introducing and transmitting Mange, yet clothing must be worn; and if Mange is introduced it must be got rid of; and it is possible to treat, and work, and cure the affected. Indeed it has to be done; but, of course it is essential to work the diseased by themselves, and to observe careful segregation elsewhere. Here, however, the veterinary surgeon has to be constantly on the alert, and to attack not only the first symptoms, but even to treat in anticipation, under some circumstances.

This opens up the question of the disinfection of clothing, which is so difficult to carry out on service, without destroying it; but I think the usual medical applications with which the blankets and brushes become saturated may have the desired effect.

I once constructed an enormous oven to disinfect mangey blankets with hot air; in it 150 were suspended, and all were so thoroughly disinfected, that not an acarus or ovum remained alive; and nothing of the blankets, save cinders and smell, was left on record in the morning!

Cineration, though the best method of disposing of carcases, cannot always be carried out where animals die by hundreds; wood and refuse are not always to be got at to meet the demands of such vast cremation as Afghanistan afforded; it was carried out so far as was possible, and the pile was constantly burning and constantly growing, from which the stench was often unbearable: that which could not be burnt had to be buried or dragged further away, to be got rid of by some other process.

In ordinary cremation the use of large dried cakes made up of bullocks'

dung and litter is strongly recommended. This class of fuel cannot be excelled, but as it is collected and used by natives for cooking purposes, it is not always available; horse manure and litter also make a good cake fuel, and may be employed for cremation, and every hospital attendant under me had to make six enormous cakes out of this material daily, and to attend to them till sun-dried and fit to store for the purpose of burning Anthrax cases in India before wood was sanctioned.

The main differences between war in Afghanistan and that in any other quarter of the globe, in so far as the veterinary service is concerned, consist in this, that there is little or no dealing with the sea-board or countries beyond it, and that we expect, therefore, nothing to be introduced by ships and their animal cargoes. We have certainly nothing to do with the sea-board in the way of a direct animal supply for field service, excepting that a few ponies may be sent up from Bombay *viâ* Kurachi and the Indus. There is, of course, the regular horse supply from Australia and Arabia to Calcutta, Madras, and Bombay, draughted to the remount depots, or to the depots of corps away on service, as in peace time for training, and afterwards as required, sent forward. All the other animal supply is derived from India—a country well calculated to provide it—so that there is therefore no remount depots anywhere falling foul and getting mixed up with base or other hospitals, and if an accident of this kind were likely to occur, it would not be for a moment tolerated.

But base hospitals, upon enormous scales, and hospitals at selected advance posts on smaller scales, will, as in the past, be necessary, and ought under the departmental system to be better organised and worked than formerly, when regimental veterinary surgeons naturally objected to be withdrawn from their charges to do duty with transport animals and native cavalry horses.

Besides base hospitals at Peshawur, Kohat, and Quetta, the first post in the direction of the Khyber Field force at Jumrood, the entrance into the Pass, had its veterinary officer to inspect all animals passing into India or Afghanistan, a duty involving untold labour, but productive of much benefit to the forces on each side of the frontier line. This action, no doubt, prevented disease being broadcast in both countries.

Well, gentlemen, it now becomes a question whether my paper admits of any discussion, considering that it purports to be a *resumé* of what has occurred; but as it is a mere relation of what will soon occur again, I shall be glad to hear any remarks, and to elucidate any obscure point.

Veterinary Surgeon 1st Class F. DUCK drew attention to a common disease affecting camels—hydatid cysts in the lungs and liver—and thought that endeavours should be made to find out how the camels contracted the parasite, so as to stamp out a very common and fatal disease.

Veterinary Surgeon 1st Class R. POYSER considered the tapeworm of dogs and pigs to blame, and thought the destruction of these animals in infected districts would be the most practical method of dealing with the subject.

Inspecting Veterinary Surgeon W. B. WALTERS was of opinion that veterinary officers should be the purchasers of animals, and that all Army veterinary surgeons should take their turn at this work. Of course some have a special aptitude for this duty, whilst others do not care about it, and would, therefore, not be selected. It rests with the commanding officer how much the veterinary surgeon has to do with the purchasing. Some commanding officers inform them that they have only to look to soundness, etc. Inspecting Veterinary Surgeon Walters thinks that the veterinary surgeon's duties should be defined, and the subject should be brought to the notice of the authorities. Many useless animals are purchased during active service, and many are bought by a Committee with no veterinary surgeon. Many camels

were purchased during the Egyptian campaign without due regard to use; they died in scores, and great numbers suffered from catarrhal affection. Indian officers of Camel Corps rendered great service in the treatment of camels, and carried out instructions given by the veterinary surgeon. Camels which were groomed did not suffer from disease so much as those which were not. As to the disposal of dead animals, he thinks cremation the best.

Veterinary Surgeon F. RAYMOND said that one of the most important duties of the army veterinary surgeon is to give an opinion in the purchase of animals, and thinks it does not require any special knowledge to select army horses. There is an impression that army horses are *special* animals, but this is a great mistake.

Veterinary Surgeon 1st Class THOMSON thinks, with Veterinary Surgeon Raymond, that the public really do believe the army horse is a special animal; it is, of course, an error. As to the care of transport animals, he said, numbers of applications were made by infantry officers for employment in the transport department during the Afghan war; these were accepted, many of them knowing nothing whatever about animals. Camels were kept standing with loads on their backs, through the ignorance of the officers in charge, and this was one of the causes of many injuries and deaths.

In a general discussion on the purchase of animals, Inspecting Veterinary Surgeon WALTERS said he would like to see the duties of veterinary surgeons laid down in regard to the purchase of animals. At present no authority is given to the veterinary surgeon; his position should be clearly defined. It would be to the benefit of the service if the veterinary surgeon was the principal in the purchase of animals.

Veterinary Surgeon 1st Class F. SMITH thought that every veterinary surgeon on joining the Army should be sent to do duty with each mounted branch, to enable him to form an opinion as to their requirements; such information would ultimately be useful to him if employed purchasing.

Veterinary Surgeon 1st Class THOMSON moved a vote of thanks to Veterinary Surgeon 1st Class Poyser for his valuable paper, which was carried with applause.

The meetings of the Association have been held once a week during the Session, when the following papers were read:—

V.S. 1st Cl. G. A. Oliver on the "Veterinary Service with the South Afghanistan Field Force." V.S. Rutherford on "Anthrax in South Africa." V.S. 1st Cl. H. Thomson on the "First Egyptian Campaign with the 19th Hussars." V.S. Morgan on "Cold Shoeing of Army Horses." V.S. 1st Cl. Duck on the "Supply of Army Horses." V.S. 1st Cl. Longhurst on the "Transport of Army Horses by Sea." V.S. K. Lees on "Soundness in Horses."

The meetings were well attended, and the above most interesting subjects thoroughly discussed.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE sixtieth meeting of the above association was held on Tuesday, June 17th, at the Grand Hotel, Birmingham. Mr. J. M. Parker, President, occupied the chair, and there were present: Mr. A. Over and Mr. J. Malcolm, vice-presidents; Professor Walley, Edinburgh; F. Blakeway, Treasurer; T. Chambers, Hon. Sec.; Messrs. C. T. Barnes, J. L. Barling, E. Beddard, J. Blakeway, James Blakeway, W. Carless, F. W. Barling, H. Collett, H. J. Dawes, F. C. Golden, E. Hodgkins, T. J. Merrick, H. Olver, H. D. Pritchard, H. R. Perrins, E. Price, A. B. Proctor, G. Russell, A. C. Robertson, G. Smith, M. Tailby, R. C. Trigger, J. Wiggins. There were also present as visitors: Mr.

Pickworth, Tamworth; Mr. F. Taylor, Stourbridge; Mr. Irving, Birmingham; and Mr. E. Lawrence, Wolverhampton.

Previous to the commencement of the business the members were entertained at luncheon by the President.

The Hon. Sec. read letters of apology from Professor Pritchard, London; Professor McCall, Glasgow; Mr. F. W. Wragge, London; Mr. T. Greaves, Manchester; Mr. Barling, Hereford; Mr. J. L. Cross, Shrewsbury; Mr. W. C. Barling, Newham-on Severn; Mr. Horton, Warwick; Mr. Burchnall, Stanford; Mr. Verney, Stratford-on-Avon; Mr. Cartwright, Wolverhampton; Mr. Freer, Uppingham.

The Hon. Sec. read the minutes of the last meeting, which were confirmed. He also stated that he had received replies to the letters of condolence directed to the families of the late Mr. Cartwright and Mrs. Meek.

New Members.

The PRESIDENT proposed Mr. Frank Taylor, of Stourbridge.

The HON. SEC. seconded the nomination.

Mr. J. WIGGINS proposed Mr. James Bayes and Mr. Arthur Marriott, both of Kettering. Mr. A. OVER seconded the nominations.

They were elected unanimously.

Birmingham as a place of Meeting.

Mr. J. MALCOLM said it was desirable that more meetings should be held in Birmingham. It was the capital of the Midlands, and yet it had been three years since a meeting was held in the town. Birmingham was a most suitable place, and if more meetings were held in it there might be larger attendances and subscriptions could be collected more readily. He moved that the first meeting of the Association be held in each year in Birmingham.

Mr. G. SMITH seconded the resolution.

Mr. H. OLVER supported the proposition, and suggested that the Association should have four meetings in the year instead of three.

Mr. MALCOLM had no objection to adding that to his resolution.

The President and several members expressed themselves in favour of the resolution, and an alteration in the number of meetings. They were also of opinion that the first meeting after the election of President should be in the district where he resided or practised.

Mr. MALCOLM said he understood that the Association was to have as many meetings as before, and an extra one in between.

The PRESIDENT suggested that to clear up the matter two resolutions should be passed.

Mr. Malcolm's resolution was then carried.

Mr. H. OLVER moved that four meetings be held, and Mr. H. R. PERRINS seconded the resolution.

Carried unanimously.

The Question of Arrears.

Mr. R. C. TRIGGER said he remarked at the last meeting at Stoke that there were a number of members in arrears. Such a state of things could go on no longer, and he thought a remedy might be found in making a rule: "That the subscription should be paid by the member when elected, or by his mover and seconder, and if such subscription was not paid in three months the election to be null and void."

He also had another resolution, and it was:

"When a member is three years in arrear he shall be struck off the roll of membership."

Mr. OLVER could not support the first resolution, for they frequently

seconded nominations of gentlemen of whom they knew comparatively little or nothing.

Mr. PRITCHARD believed proposers and seconders should be to a certain extent responsible, and he seconded the resolution.

Mr. BARNES thought three months too short a time.

MR. SMITH felt inclined to support the resolution.

Mr. BEDDARD suggested six months.

Mr. TRIGGER would leave the length of time with the committee.

It was then agreed that "six months" should be substituted, and both esolutions were carried.

Mr. BLAKEWAY (Treasurer) asked if the three years' plan would refer to gentlemen already in the association or from that day hereafter.

Mr. PRITCHARD: From to-day.

Mr. BLAKEWAY complained that he had great trouble with one member who persistently neglected to pay or answer his applications.

Mr. PERRINS moved, and Mr. PRITCHARD seconded, that his name be struck off the list.

Carried unanimously.

The Royal College of Veterinary Surgeons.

Mr. PERRINS proposed that £50 be given to the Building Fund of the College.

Mr. WIGGINS seconded.

Mr. MALCOLM thought the time inopportune. They were only represented on the Council by Mr. Perrins, and they did not often see his name in connection with the representation. He moved as an amendment: "That we defer this matter to a more opportune time." He doubted whether the Council was as economical as they might be.

Mr. BARLING seconded the amendment.

Mr. PRITCHARD supported the resolution, and thought the association should not take a petulant view of the matter. The association had given £50 before and could well afford to do so at that moment.

The HON. SEC. supported the original resolution. The gift of the £50 had nothing to do with the examiners or our representatives on the Council; it was to help to build a college for the profession.

Three voted for the amendment, nineteen for the resolution.

The President's Inaugural Address.

GENTLEMEN,—In assuming the post of President of our association to which you have been kind enough to elect me, I feel that I am incapable of giving you such an address as I could wish, and those among you who know me most intimately are well aware that speaking is not my forte, neither is composition, and when I read the eloquent and exhaustive addresses which have been delivered at some association meetings, I feel in a greater degree still my unfitness for the task. However, no Englishman is supposed to shirk his duty, and I ask for your forbearance if you should be disappointed, and hope that my shortcomings may be leniently treated. While on this subject I cannot but feel that much good *must* arise from our meetings—I mean the meetings of our associations generally—if they draw out some latent talent in the way of eloquence as well as research, and I look forward to the time when members will eagerly get on their legs and debate with enthusiasm, as was the case many years ago at the meetings of the Veterinary Medical Association at the Royal College, Camden Town. The transactions of that association were then published in a separate form, and at one time contained coloured plates. I will take the year 1837 to point out what I have referred to. The session 1836-7 was, singularly enough, the first of the Veteri-

nary Medical Association, so that practically this is jubilee year for associations in our profession. There were weekly meetings at the College, Camden Town, during the winter, and these were constantly attended by the leading men connected with the College and the most eminent practitioners in the kingdom. When I mention the names of Sewell, Simonds, C. Spooner, the Turners, Youatt, Mayer, and others, you will understand that no element was wanting to make our parent association a success. The students were permitted to be present, and I feel sure that to listen to the discussions then held must have taught them quite as much as lectures. To read the reports —for instance, one on a paper introduced by Mr. F. W. Mayer, on the cautery and setons—is to live with the speakers who debated with an eloquence and vigour that has, I fear, never been equalled since. This discussion lasted for weeks, and is interesting to the last degree. Let these meetings of fifty years ago be imitated by us, and I hope that during my year of office I may see more spirit thrown into our proceedings. In attending to this, I feel I have been as great a sinner in omission as any other member, but I promise to do better in future. Just for a few minutes I will refer to the *Veterinarian* for the same year, 1837, and a glance will show there is nothing "new under the sun," so far as many of our so-called novelties in diseases and operations are concerned. In that year there was evidently an extensive and alarming outbreak of Influenza, sufficiently so as to be most exhaustively treated by such men as W. Percivall, Professor Stewart, of the Andersonian University, Glasgow, Mr. Youatt, and Mr. Karkeek, of Truro—one of the best writers in veterinary subjects; and these observers said it was not a new disease, but was only more common than usual. The symptoms given agree entirely with the outbreak of Mucous Fever, so absurdly and unscientifically called "Pink-Eye," which prevailed a few years since. The late Mr. Stanley, of Leamington, said then it was nothing new, but he remembered the Influenza of 1837, which it exactly resembled. Although I cannot recollect that year I know the same affection has cropped up at intervals since the time I was apprenticed in 1847. You no doubt all remember the fuss that was made and the alarm created in 1881, almost the same as Cholera in the humun race would have produced; and what was the novelty in the disease? None! There is also a paper on treatment of chronic joint lameness, translated from the Italian of Signor Nanzio, that, to my mind, overshadows Dieckerhoff's operation for Spavin, which was the chief attraction of Mr. Banham's paper read at Nottingham two years ago. The point in this operation—Nanzio's—was to separate the skin by incision and dissection over the affected joint, and then with a budding iron to fire into the tissues beneath, keep the wound open with digestives, etc., as long as possible. Great results were claimed for this, and the theory of it, to my perception, agrees with Dieckerhoff, and his puncture of the bursa over spavin.

I see that in this same year Mr. Robinson, of Tamworth, performed lithotomy on a horse. This case was a difficult one, the stone being a mulberry specimen eight by nine inches, and firmly grasped by the bladder. The forceps being too weak to remove it, Mr. Friend, of Walsall, who assisted, removed it with his hand. This last gentleman was a well-known and eminent veterinary surgeon in his day, and it was thought at that time by many that he would have obtained the chair of Cattle Pathology, which was for so many years subsequently so ably filled by Professor Simonds. I have also come across a paper on hock lameness by Mr. Pritchard, of Wolverhampton, than whom there was no better authority, as his well-known papers on the hock of the horse will prove to any one who has the opportunity of reading them. Mr. Pritchard was for many years an examiner for the diploma, and is one of our most worthy links between 1837 and 1887, as ours is the Midland Veterinary Medical Association. I think we may flatter ourselves

that there was no dearth of good men fifty years ago in the Midlands—men who made their mark, and are remembered now for what they did in old days; not men whose names eventually will simply be found in an old directory, as was prophesied by an eccentric preacher in this town of his congregation. I may also here mention others who are still alive, and whose names appear in the volumes I have mentioned. First and foremost Professor Simonds, who was a constant visitor to the meetings at the College, and was not by any means a silent member, but had always some telling practical remarks to make worthy of the man of whom I take this opportunity to say, that no more zealous, conscientious teacher ever honoured our profession. Our old friend, Mr. Clayworth, of Birmingham, contributes a very good case of fractured upper jaw in a filly, which he treated most successfully. I may be excused for remarking, perhaps, that our profession, considering its members, can boast of some good specimens of longevity, as I find Professor Simonds passed in 1829, Messrs. Clayworth, Pritchard, and Price of this town in 1830; but Mr. Proctor, of Solihull, obtained his diploma in 1826, and some of the quintette practise actively now, which says volumes for their initial powers and pluck. There may be other members of equally long standing, but these veterans I have the pleasure of knowing. The heads of our profession were much exercised in this year, 1837, by the conflicting opinions in a horse cause, but I am afraid we have become hardened, and that novelty in such cases has ceased. In a leading article on the subject by Mr. Youatt, he quotes Dr. Latham, and I think the sentence so trenchant as to be worth repeating here: "The early habit of theorising may so pervert the mind of the student, that whatever may be his wish, *he cannot observe honestly*. He gives an undue weight to the facts which accord with his theories, and no weight at all to those that conflict with them—habit forces him to do so, and he cannot help it." With this I will quit 1837, to which year perhaps I would not have referred, but everything in 1837 seems to have some relation to Jubilee. And the year of her Majesty's accession being an important one in many respects, so far as its veterinary literature was concerned, I have perhaps drawn too much from that source. As regards the great benefit of associations, there cannot be, to my mind, the slightest doubt apart from their scientific object. Everybody connected with them gets some advantage. How numerous are the informal consultations which are held amongst their members? I, for my own part, should never hesitate to ask a fellow-practitioner about a knotty point in practice at any time; and, moreover, I am, and always have been, most happy to give advice to any professional friend who thinks me worth consulting. This I always have carried out, but I feel sure that the spread and progress of our and kindred associations have roused the feelings generally throughout the land. Not only do we veterinary surgeons derive good from it, but our patients and clients also, as the greatest confidence which has arisen tempts us to chat over interesting and difficult cases in a friendly manner, to which years ago so many were strangers, with good results to all concerned. I wish sincerely, that the meetings were better attended; surely we ought to make some slight sacrifice three or four times a year, as our business is not worth following. I think that half our members might show up, but unfortunately there are far fewer than half occasionally; simply subscribing 10s. a year is not that which is needed. What is wanted is greater interest, and more life in the proceedings. Again, as latterly we have nominated gentlemen to represent us in the Council of the R.C.V.S.—not always successfully, I am sorry to say—that fact alone should draw us together, and lead us to consider seriously who is the man we should know by supporting. At present we have to rely upon the *Veterinarian* and JOURNAL for our sole knowledge of the Council's work, and should our selected and elected man be what is popularly

known as a silent member, and there are many such, we have not the slightest idea of his worth, or what he has done.

The reports do not give the names of voters on any question; simply the numbers, and I consider we are fully entitled to know which way our representatives have voted. I don't believe in a "caucus" or in interference of speech, but we are in the dark entirely as to the feelings and opinions of the bulk of the members of Council. No formal report or explanation is vouchsafed to us, and if the Council cannot and will not give the names in any division there may be, I think the only thing to be done is for the member any association nominates to give an account of his stewardship annually to his association—say, the first meeting in the year. Members of Parliament have to address their constituents; why should we not be similarly treated? With the examination disagreeables, which I do not now further refer to, as Mr. Barling will presently read a paper on that subject to you, which I hope will provoke a really animated discussion, and the want of new and earnest blood in the Council, the profession is, to a greater extent than usual, on its trial, and therefore it behoves us to select the very best men to represent us, and our choice can only be made sensibly by knowing exactly how much the present Board has done. I write in no carping spirit, but it stands to common-sense that we ought to know the voices of *every* member of Council, not the small proportion only. Votes are very useful, but we want to know how they are given. If, as I suggest, the names in divisions were published, we should have a check on our friends' actions. As it is, we are entirely ignorant. We should have the affair treated as a matter of business and a formal report, either by means of the serials or from the lips of the Council. What is worth doing at all is worth doing well. All the talk at present seems to arise from very few mouths; some lips never seem to be used in the Council chambers as a help to speech. As I hope to see a great change and improvement in the work done, I feel that I have taken up a great deal of time which would be better devoted to the burning question of the day in our circle—namely, the examinations; but I *must* refer to Dr. Klein's lecture at the Royal Institution on the virus of Scarlet Fever which may result from a disease, and I make no apology for reading portions of the leading article in the *Lancet* of June 1st. Judging from this, there does not seem to be any doubt as to the doctor's conclusions. But if I remember rightly, our friend Mr. Greaves combated similar views on an outbreak of Scarlet Fever in his own neighbourhood. Although there can be no hesitation in believing that micro-organisms exist all around us, how are we outsiders to form a just opinion of the various microbes which, according to bacteriologists, have their special powers to produce disease, when one of our learned professors declares he has found an "organism," and another equally learned teacher says it is only a bit of fat? Is it defective eyesight in one or the other, or is it accounted for by what I stated previously on this paper about theorising—in other words, riding a hobby to death. Seriously, however, in our days much is expected from veterinary surgeons, and it is of paramount importance that we should keep up with the times, and not allow the sister profession to find out most of the good things.

Apropos of inoculation, there is one point connected with the Swine Fever on which I should like to have the views briefly of such members present who are constantly seeing cases of that disease. I, after much observation, have come to the conclusion that many outbreaks are caused by country "gutters." They are, as we know, not celebrated for cleanliness, and no doubt are ready to operate on any animal, well or ill. Now I wish to ask if any of you notice this fact, that when pigs have been cut they have the disease in a less acute form than those that have *not* been done. I have seen the sow pigs left uncut die in two days, but I have known the hogs that

were cut live for three weeks or a month. Again, I have seen the whole farrow of pigs cut and be apparently not affected except to a close observer, but the old sow has died quickly from the disease. I very much question if there ever is a complete recovery from the fever, and am sure the only remedy is to stamp it out. But if inoculation can modify it—and by inoculation I mean the rough-and-ready way done by the cutter with his dirty hands and knife, it might be carried further and cultivated *à la Pasteur* & Co.

With this brief reference to a most important branch of science I draw my remarks to a close, with the hope that I have not altogether wasted your time and overtaxed your patience, and that there has been at least some interesting matter placed before you. I thank you heartily for your attendance, and hope that some volunteers will be ready armed with papers for our next meeting. And *apropos* of that, we surely ought to manage one every quarter. We are supposed to have four meetings a year. Let us commemorate the present one by holding that number, and hoping that as many of you will remain to dinner as possible. You can tell your wives and families that being Jubilee year you were tempted. And again thanking you for your presence and support, I now conclude.

The Students' Disturbance at Edinburgh.

Mr. F. W. BARLING read a paper on the above subject.

Mr. PERRINS said the President of the Council had only one object in view, and that was to do what was right and just towards the members of the profession. The students had adopted a wrong way of redressing any grievance they might have had. They had a far better way open to them than by having a row. He had never heard that the students had been relegated for incompetence.

Mr. BARLING said it had been so stated.

Mr. PERRINS thought it was wrong to say so; but the whole matter had better be left alone to die.

Mr. BARLING said he could not allow——

Mr. WIGGINS rose to a point of order. Mr. Barling had a right to reply at the end.

The PRESIDENT ruled Mr. Barling out of order.

The HON. SECRETARY said he could see nothing to discuss; there was no resolution before the meeting.

The PRESIDENT was willing to hear all they could say about the matter from gentlemen who really knew the facts.

Mr. C. T. BARNES, speaking of Mr. Robinson, said he had a certain sarcastic way with him which the students didn't like; but they should have faith in the Council and the examiners; and it would never do for such disturbances to happen because a few students were relegated.

Mr. WIGGINS thought the Association would not be doing its duty unless it marked, in unmeasured terms, its condemnation of the way in which the students treated the examiners at Edinburgh. The latter had to protect the profession from being filled with people with insufficient knowledge, and if the students were to be the judges the sooner the profession went to the dogs the better. Rather than the students should fix the amount of knowledge necessary it was better they should be relegated *ad infinitum*. There were ways of redressing grievances by an appeal to the law. If a man struck him (Mr. Wiggins) in the eye, was he to take a bludgeon and dash out the man's brains? The miscreant crew, who, with rotten eggs and other missiles, assaulted the examiners, ought, if found, never to be allowed to join the profession. It was an atrocious and an abominable assault by disappointed students. He moved that the sympathies of this meeting be offered to the examiners on the occasion of the assault, and we express our confidence in

the Board of Examiners. He felt a certain passive support had been given to such conduct from another quarter, and he did not believe in the unkind things which had been said of Dr. Fleming, a man who had devoted his life to the interests of the profession, and who had worked his brain in its service. He had written the best work on dissection, and yet they said he was an amateur. He (Mr. Wiggins) could say nothing strong enough for such conduct.

Mr. PROCTOR asked the meeting whether it was proper for them to interfere. The Association had a representative and it should be left in his hands.

Mr. JOHN BLAKEWAY had had experience that the examiners were fair, and should be supported. But he knew one examiner who was not what he should be to the students, nor was his way calculated to raise the standard of the profession. It showed the students felt that the body of examiners were fair when only one of their number was selected for assault.

Mr. BARLING agreed with the last speaker. Mr. Robinson put his questions in such a manner that no one in the room would speak to a stable lad.

Mr. OLVER held that as the matter was still *sub judice*, the Association should not yet discuss the matter so far as to send a resolution. He did not say that they could not discuss the matter in a general way, but it would be well to proceed no further at present, considering that the matter was still being discussed by the proper authorities. It would have been better that many of the letters published in the newspapers had never been written. Further, he regretted that Dr. Fleming had taken part in the discussion. He (Mr. Olver) thought it only fair that the marks of all the men, relegated or not, should be published. That there was a feeling against one examiner no one could deny, and it should be arranged that there should be a theoretical examination and a practical, together with a written examination. The latter would prevent any quibbling as to what had been said and would give a student a chance of quiet reflection, which an oral examination would not. He felt quite sure they would be wrong in discussing the matter that day.

Professor WALLEY said he deprecated the unfortunate occurrence as much as any one, and he defied any one to prove that the teachers in any way whatever supported the pupils in what they did. Statements likely to lead to mistakes had been made, and it was time they were contradicted. For instance, Mr. Perrins had made a remark to the effect that Professor Walley might have prevented it had he been present. But he (Professor Walley) had no more to do with the disturbance than any man in the room, nor was he near the examiners' room at the time. He had been charged that he had not stopped the second night. That he had already explained in the *Veterinarian*. But there were some present who knew that for two or three weeks before an examination, the teachers' work was most exhaustive, and the strain on the mind and body very great indeed. He therefore had to state that when the time of examinations came on he was glad to take a rest. No one regretted the occurrence more than he did, and he had lost more than one night's rest in thinking of the unfortunate business and the injustices connected with it. There was much unpleasantness in having misunderstandings with men with whom one had been friendly and intimate, and it was quite possible to feel that some hard-working men ought to have passed. If it were possible for the teachers and the examiners to change places for a little time, it would be found that the balance would be in favour of the teachers. A remedy had to be sought and for the sake of the profession should be sought. In 1880 or 1882 the question had been brought before the Council for an alteration, but the subject had been spoken in favour on one day and opposed the next. There would have to be practical and theoretical examinations to get good men in the profession. Yet what did the examiners do? They sent a man back because he failed practically, and yet they said,

You can't teach practice in this college. They should let the man pass in the theoretical, and then go to gentlemen, like the members present, to see something of practice. They could easily be taken for a fee and learn what they wanted. On the other hand, if a man failed in the theoretical, let him be put back by all means. As to the question of marks he asked that they should be shown fair and above board. He had them himself, but should keep them yet. He knew, however, that men had been relegated for three months with the same number of marks that other men had to go back for twelve months. One of the accused riotous students was on the Irish Sea at the time of the occurrence, and none of his (Professor Walley's) men were in it. No doubt the examiner might have been too disputatious, but to call him the names which had been used during the troublous times was not honourable. He was no doubt anxious to do his honest best for the profession. The men who took part in the disturbance were men who had been rejected time after time, and who had lost all interest in the business. In conclusion, he felt sure that if the subject was adjourned, the meeting would look at it in a different light that day three months. He thanked the meeting for a patient hearing.

The PRESIDENT said it was the undoubted opinion of the meeting that it was not the time to pass a resolution on the subject at once.

Mr. WIGGINS said he should like to test the feeling of the meeting, and see if it did not fix the injustice on the students and not the examiners. He moved, "That this meeting views with the utmost abomination the action of the students in Edinburgh towards the examiners, and we extend our sympathies to the examiners in the matter." The conduct of the students was a disgrace to the unwashed plebeians of Seven Dials.

Mr. BARNES seconded the resolution.

The HON. SEC. begged to move, as an amendment, that the whole matter be discussed at the next meeting.

Mr. CARLESS seconded the amendment.

Seventeen voted for the amendment and four for the resolution.

Mr. PRITCHARD moved a vote of thanks to the President for his conduct in the chair and his valuable paper.

Mr. PERRINS, seconded. Carried unanimously.

The PRESIDENT returned thanks.

Northampton was selected as the next place of meeting.

The members afterwards dined together at the Grand Hotel.

T. CHAMBERS, *Hon. Sec.*

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of the above Association was held at the Albion Hotel, Lincoln, on Thursday, June 9th, 1887. Present: T. Greaves, Esq., President, in the chair; Messrs. B. Freer (Uppingham), Vice-president; R. T. Hardy (Sleaford), Vice-president; C. Hartley (Lincoln), Vice-president; Capt. B. H. Russell, Grantham, Treasurer; Messrs. F. L. Gooch (Stamford), Hon. Secretary; W. H. Brooks (Fulbeck), T. Smith (Market Rasen), F. Spencer (Wragby), G. Osborne (Fulstow, Louth).

The Secretary, Mr. GOOCH, proposed that Mr. John Swan, of Stamford, be elected a member of the Association. This having been seconded by Mr. FREER, and supported by Mr. HARTLEY, was carried unanimously.

Apologies for non-attendance were read from Messrs. J. W. Gresswell (Peterboro'), Wragg, W. A. Field (Grimsby), Goodall (Melton), Mackinder (Peterboro'), F. H. Reeks (Spalding), W. Williams, T. Brodie Gresswell, Prof. Axe, Messrs. H. Santy, A. H. Brooks, Prof. Robertson, Prof. Walley, Messrs. Howse (Lincoln), Banham (Cambridge), and Aitken (Loughboro').

Letters had also been received from Messrs. Cox, of London, and Wragg, thanking the Association for the support given them in the election for members of the Council.

The PRESIDENT: They are good men, and you have done right in supporting them.

The SECRETARY noted that no members were enrolled from Gainsborough and other places, and asked if the members would assist him by giving names of those eligible.

The PRESIDENT then delivered his inaugural address as follows:—

GENTLEMEN,—In the first place it is my duty to acknowledge the honour you have conferred on me by electing me your President, and to thank you for such a mark of respect. In the second place it is my duty to do all I can to benefit this Association, and, if possible, to render its meetings more interesting and useful, creating and diffusing amongst my professional brethren a more cheerful and hopeful spirit, as well as a more ardent desire in the pursuit of laudable veterinary objects. Are we not told in that best of all books to take fast hold of instruction? Let her not go; keep her, for she is thy life. In casting about for interesting matter for this address, I may say I do not find myself in that painful dilemma that some persons have said they have been in—viz., at a loss to find a subject which had not already been thrashed out, for really I find myself almost overwhelmed with deeply interesting matter. If at a loss at all, it is which of the many subjects that present themselves I must select.

There are various scientific subjects full of interest—subjects in which the man of a meditative turn of mind, one given to original research, would simply revel in. For instance, *studying disease*, getting a clearer and better knowledge of what disease is—its origin, the law or nature of its progress. A clearer and better knowledge of the *modus operandi* of *medicinal agents;* getting a true and clearer knowledge of its action in health and in disease; getting a clearer and better knowledge of all other *conditions or circumstances* that have an influence in the creation, fostering, or the subsidence of disease, *irrespective of medicinal agents.* Getting a clearer and better knowof *hereditary ailments*, and how to cope with them. Getting a clearer and better knowledge of the *cultivations and microscopic appearances of various organisms.* In these various subjects there is a wide field for study. Again, there is the germ theory; the discoveries of Pasteur, the mysteries of Anthrax, Hydrophobia, zymotic diseases—consider the subtle nature of the process of these diseases—and many other deeply interesting and important subjects, any one of them by itself well worthy the pen of our best men. Remember life is short, and our opportunities of doing good will soon be passed; we cannot be always procrastinating and be always intending to make an effort to benefit our profession. It will not do to be perpetually calculating risks and adjusting nice chances. It did very well before the flood, when a man could consult his friend for one or two hundred years on every matter, and then live to see its success afterwards; now if a man waits to consult his friend, time passes, the opportunity is gone, and there is no more time left him to carry out his purposes.

I might have called your attention to veterinary politics; to the teaching of our students; to the value of practical instruction; to teachers and examiners; to the late disgraceful occurrences in Edinburgh, and the desirability of instituting a thorough investigation of them; to the value or non-value of specialist examiners—men wholly innocent of all veterinary knowledge—and compare them with others who possess a general and intimate knowledge of every phase of veterinary science, and show which of the two is likely to be the best judge of the qualifications of the student in reference to his proficiency in veterinary knowledge; to the value to be set on the names on your

diplomas, their influence in your success in life. The VETERINARY JOURNAL recently said: "The nonsense talked about having the names of distinguished specialists on the diploma is not worth notice, except for the argument employed in support of it, that these specialists pass more students than does a board composed of veterinary surgeons; this is perfectly true, but it is, judging from the experience of many years of specialist examinations, a most powerful reason against having such men as examiners. They do not understand our requirements, and have no interest in our profession. This fact has been made patent to all careful and candid observers." Are they taken as a guarantee that you can restore a sick horse to health, or a lame horse to soundness? Is it not, after all, the actual results of your individual knowledge that you are judged by? I say, if Albert Edward himself signed your diploma, it would avail you nothing if you are deficient in practical knowledge—inaptitude in your application. To the way in which the influence, power, and usefulness of provincial veterinary medical associations can be made available in advancing the best interests of the profession, showing the present apathy in the members, and prescribe the best means to remedy it. There are noble souls in our profession, whose zeal and energy would desire our meetings to be more frequent; but there are others, and I am sorry to say it, whose utter indifference and apathy would seem to say that once in a thousand years should suffice. To explain the objects and aspirations of the National Veterinary Association; to lay before you the object, aspiration, and usefulness of the National Veterinary Benevolent and Defence Society. Each of these subjects individually are worthy of being taken for an inaugural address or an essay, to be read and discussed before any association.

We have at our colleges gentlemen who are eminent, who have distinguished themselves as scientific men—men devoted to their profession, and who are most anxious to make their students clever veterinary surgeons. All this we are proud of; but are we who are general practitioners, who are equally anxious to see our noble profession advance, to stand still with folded arms and leave it all for them to do? I maintain that it is the bounden duty of each man to act well his part. Although I respect and reverence a cultured and scientific man, I must at the same time tell you that others, not so favoured by being possessed of high scientific attainments, can, and, as history proves, have, investigated and grasped difficult problems, thrown light upon obscure subjects, and assisted to clear away mists which have obscured for centuries some great, grand truth. It may be that such a one has been placed in favourable circumstances, had extensive opportunities afforded him, and, possessing an inquiring mind, he has perceived cause and effect in a clearer light than other men have been able to do, and has seized hold of a great truth which all other men have failed to understand. We must recognise the fact that there is a vast difference in different individuals in the intensity of intellectual effort. Some men have a sensitive appreciation, and are impelled by an irresistible longing to seek out a better remedy.

What I am endeavouring to lead your minds to is this—viz., that any one of you, although you may not have any pretentions to high scientific attainments, may happen to be placed in favourable circumstances, and have extensive opportunities to clear up some perplexing and vexed question in reference to the nature and treatment of some particular disease, and, by a proper application of your intelligence, you may render a signal service, not only to our noble profession, but to mankind at large, by recording it. Remember, an avaricious man is like the barren, sandy soil of the desert, which sucks in all rain and dews with greediness, but yields no fruitful herbs or plants for the benefit of others. In considering the origin of disease, the investigations of Pasteur seem to

have proved that we may now with certainty reason in the belief that not only are organised substances really found in great abundance in the atmosphere, but that they are the cause of some hitherto entirely mysterious phenomena, putrefaction included. If we examine previous inquiries into the compounds resulting from the decomposition of organic substances we shall find nothing which is at all calculated to bring out such an intelligible view of the origin of many diseases, and also of some phases of putrefaction. Chemists, when they have examined products of the latter action, have found sulphuretted hydrogen, carburetted hydrogen, hydrogen, carbonic acid, nitrogen, ammonia, acetic acid, lactic acid, buytric acid, and numerous uncertain bodies having no activity, and, to all appearance, utterly incapable of producing those prodigious results that are found when the force begins to work that produces those fatal diseases which decimate our flocks and herds. That organic matter, the *débris* of living bodies, exists in the air can be shown by incontestible proofs. It may be recognised by the sources, and made evident by the scientific processes of the chemist. It has been rendered almost certain by Pasteur that fermentation and putrefaction do not go on without the presence of organisms, and most likely living organisms. By passing air through cotton wool these organisms can be so filtered out that the filtered air finding entrance to a vessel containing flesh does not set it into putrefaction. The solid bodies contained in the air were deposited on the cotton wool through which the air had passed. The organic substances were destroyed by heat, a little above or a little below boiling water, and would not afterwards excite putrefaction or fermentation. The nature individually of these bodies, both as regards quantity, character, and functions, is what now requires investigation. Pasteur first gave the substances duties to perform, giving, in fact, a finish to the inquiry up to this stage, viz., that putrefaction and fermentation are begun only when there are present bodies in the air which are not gases or vaporous, but solids, and have an organic structure and are living; so it will be seen, whenever there is a deficiency in ventilation in a stable, there will be an accumulation of organic particles originating in organic functions, mainly the acts of respiration and perspiration, injurious to health, and ultimately to life, they being direct poison to the animal frame. These statements are not new, but they are sufficiently important and interesting to be worthy of recapitulation. We are evidently opening up rapidly and satisfactorily a new era of sanitary science in respect of a knowledge which is calculated to guard us against the inroads of infectious diseases. The advance is simply marvellous—it has been by leaps and bounds. Every such advance is a clear gain. Many illnesses are regarded as mysterious in their origin simply because of our inability to account for their causes. Last night, before the Lancashire Veterinary Medical Association, Dr. Dreschfeld gave a deeply interesting lecture on micro-organisms. It appears to me that the time is fast approaching when all doubt or uncertainty as to the existence of any particular disease will be cleared up with unerring certainty by demonstrating the existence of the particular or individual micrococci, or bacteria, or bacillus, which the microscope will at once detect in the sputa, or excretions, or in the blood.

If I were to pray for a taste which would stand by me under any variety of circumstances, and be a source of happiness and cheerfulness to me through life, and a shield against its ills, however things might go amiss and the world frown upon me, it would be for a taste for reading the above subjects, studying and meditating upon them as if in a serener clime—

> "Where never creeps a cloud, or moves a wind,
> Nor even falls the least white star of snow,
> Nor even lowest roll of thunder moans,
> Nor sound of human sorrow mounts to mar
> The sacred, everlasting calm."

At the close Capt. RUSSELL proposed a hearty vote of thanks to the President for his inaugural address and his expression of his views on the subject he had undertaken. He had rightly said life was but short and the opportunities were very few, and it certainly behoved them to be prepared and ready to embrace every opportunity that might occur, and learn to master the subjects that were brought before them. Even some of their older members of the profession found they had almost to begin their studies again, and go through what they considered they knew all about and make fresh researches, in consequence of the rapid progress that had been made during the last ten or twelve years. It was a very interesting inaugural paper, and he hoped Mr. Greaves might long enjoy health and strength. He hoped before the next meeting to have had the opportunity of inspecting and admiring the admirable picture of their President which had been presented to the Royal College.

Mr. GOOCH had great pleasure in seconding Capt. Russell's proposition, which was supported by Mr. HARTLEY, who said that he trusted their good wishes for the President's health might be carried out in their entirety.

The resolution was unanimously adopted, and the President suitably returned thanks.

Mr. GOOCH then read his paper as follows:—

SOME OF THE HELMINTHS OF OUR DOMESTICATED ANIMALS AND THE DISEASES CAUSED BY THEM.

MR. PRESIDENT AND GENTLEMEN,

From one so young in the profession you must not expect to learn anything new, but from the few notes collected on what I consider some of the principal parasites of our domesticated animals I trust a discussion may arise which will be beneficial to every one present. Although helminthology was considered by most students a very dry and difficult subject, I think, nevertheless, it plays an important part in the after life of the veterinary surgeon, as so many diseases which he is called upon to treat (both external and internal) owe their origin to the presence of some one of these parasites. Helminths may be classed under two heads, viz.: Entozoa, or those living inside, and Ectozoa, or those living outside. I shall first consider the entozoa, commencing with those of the horse, and from the short time allotted for a paper, I shall not think of describing the minute anatomy, etc., of any one particular helminth, but simply give a rough sketch of a few infesting each animal.

The first one that I shall describe, and the commonest of any infesting the horse, in my opinion, is the *Ascaris megalocephala*, or common lumbricoid of the horse, so called because thought to have a large head, but, in reality, it has no head. It resembles the garden lob-worm, and from the so-called head there are three prominent lips; the body is smooth, somewhat pointed at the tail. The males are from six to eight inches long, females seven to seventeen inches long. It is found in almost every part of the intestinal canal, but generally in the small intestines. There are two ways by which the embryo is developed, viz., either by yelk segmation or direct generation. They are oviparous, and the embryo, "after freeing" itself from the egg, either migrates about water, herbage, etc., are swallowed by the horse, and there become maturely formed, or else pass through some intermediary bearer before becoming sexually matured.

Symptoms produced in the horse by this worm.—Colicky pains seen intermittingly, unhealthy condition of the skin, staring coat; and although the animal feeds well, he does not improve in condition, but, to use a common expression, he is very "tucked up," pale condition of the vis. mucous membranes. In some instances you get pouches formed, due to the attenuation of

the coats of the intestines, and in one instance I remember a horse that died from a large number twisting themselves together and completely blocking the alimentary canal.

Treatment for lumbricoid.—There are many receipts for the expulsion lumbricoid, but the one I have been very successful with is the following:—℞ Antim. Tart. jss. ʒ, Ol. Tereb. js. ʒ, Ol. Lini. ɪO, followed by an aloetic purge in the morning, the animal to fast. The other remedies are Santonine, Ferri Sulph., Felic. Maris, etc., etc.

Strongylus armatus, or palisade worm, at first supposed to consist of two varieties, viz., major and minor, but it has been proved that they are simply different stages of growth of the same parasite. It is a moderate-sized nematoid, having a straight body, with a globular and somewhat flattened head males, 1 in. to 1½ in. long; female, 1½ in. to 2 in.; found in the intestines, especially the double colon and cæcum.

Development.—Their embryo is developed in the interior of the egg after its expulsion from the host, and being lodged in moist mud, where, according to Cobbold, they change their first skin in about three weeks, after which they pierce the bodies of their intermediate bearers (snails, etc.), from whence they are taken whilst the animal is drinking, or in the fodder, into the alimentary canal of the horse, their ultimate host. From the stomach they bore their way into the blood-vessels, where they again change their skin and give rise to aneurism. After a time they again commence their wanderings, and pass into the large intestines, where they rapidly acquire sexual maturity. It is a dung feeder, but sometimes, during its wanderings, it passes into other tissues of the body (kidney, liver, etc.), and sometimes produces fatal results (example in the VETERINARY JOURNAL for March). The minor stage of this parasite is the one which is most dangerous to its equine host, viz., when it is in the blood-vessels. Its principal seat is at the root of the anterior mesenteric artery, but is also found to give rise to aneurism in the cœliac axis, post-mesenteric, splenic, and even the aorta itself. The common lumbricoid, palisade worm, and the four-spined strongyle (Strongylus tetracanthus), are the three parasites principally productive of Colic.

Strongylus tetracanthus (male and female about the same size, viz., ½ in. to ¾ in.), found in the cæcum and colon. It is a true blood-sucker, and is developed very similar to the Strongylus armatus, except that, when in the intestines, in the trichonemous stage, they pierce into the inner coats, encapsule themselves, and form little pill-like masses, and then again enter the tissues of the intestines before becoming mature.

Symptoms produced by the Strongylus armatus.—Loss of flesh, colicky pains, more or less constant, coat unhealthy, muscles flabby, abdominal distention, diarrhœa, fæces fœtid and watery, mucous membranes pale, great weakness, more or less frequent cough, and sometimes partial or complete paralysis, due to the formation of a clot of blood, causing thrombosis of one of the principal vessels, and thus interfering with the supply of blood to that part supplied by the particular vessel.

Treatment.—I have found the same treatment which expels the common lumbricoid will expel these strongyles, but you must be careful in administering the Ol. terebinth, as it will very often irritate the wounds caused by the Strongylus tetracanthus piercing the coats. Of course this treatment applies to the mature stage of these worms.

Oxyuris Curvula, or pin worm.—It is fusiform in shape, gently curved body smooth; males 1½ in. to 1¾ in., and females 3½ in. to 4¾ in. long; found in the cæcum and colon, and, although not found in the rectum, causes great irritation at the anus by the clusters of eggs which form around it in the form of incrustaceous matter.

Treatment.—A carthartic, followed by Ferr. Sulph., also carbolic acid in 1

to 40. Cobbold says Santonine is no use in the treatment of this parasite. If the eggs are left in water they burst, and the parasite escapes.

The *Cestoids* of the horse are very insignificant, both as regards their size and the symptoms they create, the two principal being the Tænia perfoliata and the Tænia plicata. The *perfoliata* is the most common, but is only from 1 in. to 5 in. in length, found in the cæcum and colon, and is distinguished not only by its length, but also by the rounder condition of its head than the *plicata*, which is nearly square-headed, and from 6 in. to 3 ft. in length, seen in the small intestines and stomach. Generally you can tell a horse with tape-worm by finding some of the proglothides in the fæces. The best remedy for Tænia is the Ext. Felicis Maris, combined with the Ol. Tereb. and Ol. Lini, to be given three days in succession.

Another species of parasite, but which is not a true helminth, is the *Gastru equi* or common bot, classed with the parasites on account of its larval form living as a parasite. It is the larval state of the bot-fly, which deposits its eggs on the hair of horses, in such a position as to enable the horse when licking itself to take the egg into its mouth, which, from the warmth and moisture of the tongue, combined with the pressure of licking, bursts, and a small worm escapes, which sticks to the tongue, and then passes down into the stomach, and there fixes itself, by a hook on each side of its mouth, to the cuticular lining. It here undergoes no change (except that of growth, being at this time about one inch long) for about nine months, when it detaches itself, passes into the food, and is discharged with the fæces; it then burrows into the earth, and assumes the pupa state, where it remains for about six weeks, and then develops itself into the perfect fly. There are several other kinds of œstri affecting the horse, but time does not permit of a description.

Ox and Sheep.—As several parasites infest both of the animals, I shall not take them under different headings, but try and point out the different pathological condition they present in each animal. The first I shall describe is the *Fasciola hepatica*, or common fluke (giving rise to the disease called *Rot*, and more frequently met with in sheep than in cattle), is a large nematode worm, flattened and ovate-lanceolate in shape, the mouth being surrounded with a powerful sucker. It is a hermaphrodite; length, ½ in. to 1¾ in.; breadth, ⅛ in. to ¾ in. It infests the livers of ruminants, horses, rabbits, hares, kangaroos, and, according to Cobbold, it has been found about twenty times in the human subject. It gives rise to *Rot* in nearly all these animals.

Development, this parasite passes through eight different stages before becoming the mature fluke. First, the eggs; second, the ciliated *embryo*, which bursts from the eggs in ditches and ponds, etc. In this condition it remains free for a few days, loses all its ciliæ, and becomes the third, or *Planula* stage, or in the form of a creeping larva, which attaches itself to certain mollusks, principally the Planorbis carnus, or common water-snail. Fourth and fifth stages are called nurses, which are of two kinds, organised and inorganised; when inorganised, called Sporocysts or germ sacs; when organised they more resemble the mature fluke, and are called Rediæ; after which they pass to the sixth stage, or Cercariæ; tailed, in which state they are taken by the sheep, etc., when drinking, into the stomach, where they soon lose their tails, and pass into the seventh, or *Pupa* stage. They are now rolled upon themselves, pass up the ducts into the liver, where they soon become maturely developed.

Symptoms of Rot may be divided into three stages, viz., early, advanced, and final.

Early Stage.—They walk slow, great thirst, appetite increased, and continue to gain flesh for about six weeks, when the rumination becomes im-

paired; mucous membranes become pallid, and you arrive at the second, or *advanced* stage, in which you get a falling off of the appetite, feebleness, pain on pressure to the loins; skin and mucous membranes very white; conjunctival membranes infiltrated; wool dry, brittle, and easily detached. *Final.*—Pendulous abdomen, swelling at the jaw, razor back, extreme emaciation, staggering gait, diarrhœa, wool falls off.

Treatment.—No use; but in the first stage the disease may be checked, so as to enable the animal to be fattened by removing to higher ground; give a saline purgative, and give nourishing food, and let the fodder, etc., be that which was grown on some elevated land, and take care there are no stagnant pools.

2. *Strongylus micrurus*, or small-tailed strongyle, is a moderate-sized nematode with a round head, more or less winged. The reproduction is oviparous. Males, 1½ in. to 1¾ in.; females, 2¾ in. to 3 in. It is the Husk-producing worm of cattle. The common earthworm is the intermediate bearer.

Strongylus filaria, or common lung strongyle of sheep, is distinguished from S. micrurus by having no papillæ on its head. Males, 1 in. to 1 ft. 2 in.; and females nearly 3 feet long. The development of this parasite is unknown, but Cobbold thought that its larval form infested snails, etc.

Symptoms of Husk.—Dull expression, quickened breathing, fœtid breath, foaming at the mouth and nostrils, violent and spasmodic cough, loss of appetite, emaciation.

Treatment.—There are various specific remedies for the treatment of Husk, but in my experience I have found the following to be the most successful:—℞ Ol. Tereb. ss. ʒ., Ol. Lini. ii. ʒ., Æth. Sulph. min. X. To be given two mornings in succession, then miss one morning, and give a third dose on the fourth morning. This, in my opinion, sets up coughing, and consequent clearing of the tubes of the larvæ and mucus. I think any remedy that would destroy the parasite would also destroy your patient, as I have placed one in sulphuric acid, and he made vermicular movements for several seconds. Other veterinary surgeons have had good results from inhalation of chlorine gas, etc., which acts in the same way as the above. Others have tried the intertracheal injection of Ol. Tereb., etc., but I have not yet heard of any great success attending its use. My cousin tried it in calves, but was not very successful. I should also support the system with as much good nourishing food as possible.

Strongylus rufescus, or Gordian Strongyle (so called because Dr. Crisp thought it to be a gordius), is very often associated with *S. filaria*. Males, 5 in. to 6 in.; females, 6 in. to 7 in.

The principal cestoid of ruminants is the *Tænia expansa*, which, when fully mature, is more frequently seen in the sheep than the ox. Its body consists of about 1,000 segments broader than they are long. It is the longest of all tapeworms, being (according to Cobbold) in sheep from 8 feet to 30 feet, and in oxen, from 40 feet to 100 feet. Width at its widest part, ¾ in.; found in the large and small intestines. The late Professor Cobbold thinks its larval form resides in the louse of the ox.

Symptoms.—Emaciation, with dysentery, with a falling off of the appetite.

Treatment.—Ol. Felic. Maris, given in doses according to the size of the animal, but I think it very rarely happens that veterinary surgeons are called upon for treatment of this parasite.

Cysticercus bovis, or beef measle, differs from the pork and mutton measle in its head not being furnished with hooks. It is the larval form of the common tapeworm of the human subject, Tænia mediocanellata. The larva, when out of its capsule, is generally ¼ in. to ½ in. long. The Cysticercus ovis is supposed to be the larval form of the Tænia tenella.

Another bladder worm, found only in the mesentery of the sheep, is the slender-neck hydatid Cysticercus tenuicollis, and is important as being the larval form of the Tænia marginata of the dog. Another important hydatid of the ruminants is the one giving rise to Gid, and is called the Cœnurus cerebralis, generally found in the brain of sheep, cattle, goats, deer, etc., and also in the soft structures of rabbits. It resembles the larval form of T. Cœnurus of the dog.

Symptoms of Gid.—Rotary motion; do not graze freely; paralysis on the opposite side to the vesicle; head elevated or depressed if situated in the centre, animal easily frightened.

Treatment.—Medical treatment no use – advise slaughter.

Trichocephalus affinis, or common whip-worm, sometimes gives rise to severe symptoms in ruminants, particularly in sheep. Males and females about 4 inches long.

3. *Pig.*—The helminths of the pig, although not very detrimental to the animal itself, are nevertheless of a vast amount of importance in respect to the entozoa of the human subject, it being the intermediary bearer of some very important human parasites in their non-mature state. I shall, therefore, only describe one parasite affecting the pig, viz., *Trichina spiralis*, or spiral flesh-worm. The development of this parasite takes about three weeks after being taken into the stomach, capsule digested, then pass into the intestines of the pig, principally the duodenum, where it takes two days to become mature; then after about a week the embryos leave the body of the female worm, and immediately commence penetrating the walls of the intestines in order to pass as direct as possible into some voluntary muscle. From the time they commence their wandering to the time they become the mature trichinæ is about fourteen days. Each one is generally enveloped in a capsule, but two, or even four have been found in one capsule. Male 1-16th in., female 1-8th in. long, larvæ 1-27th in. to 1-30th in. They have been known to live in their capsules from eighteen months to two years. This parasite is the larval form of the Tænia soleum. Other important parasites of the pig are the *Stephanurus dentatus*, or crown-tailed strongyle, and *Echinorhynchus gigas*. This latter is the only thorn-headed or acanthocephalous worm liable to infest our domesticated animals (Cobbold).

4. *Parasites of the Dog.*—Of all our domesticated animals, I think that the dog is the one which we are more often called upon to treat for parasites, and the first one I shall described is the *Ascaris marginata*. It is the commonest of all parasites infesting the dog, and is a moderate-sized nematode, nearly uniform in size throughout. Males 2 in. to 2½ in., females 3 in. to 6 in. long. It is similar to the *A. Mystæ* of the cat, and the *A. Leptopera* of larger canines, being all separate varieties of the same parasite, and only differing from each other by the wings placed on each side of the head, which are the smallest in the dog and largest in the larger canines.

Symptoms.—Wasting, voracity, irregularity of bowels, short cough, irritation at anus; in the cat, more particularly, you get vomits of large quantities of mucus with numerous parasites.

Treatment.—Castor oil, with from two to four grains of Santonine, according to the size of the dog.

Another nematode infesting the heart of the dog, and the larvæ of which are found circulating in the blood, giving rise to fits, which often end in death, is the *Filaria immitis*, or cruel thread-worm.

Tænia serrata is a moderate-sized cestode, from two to three feet in length, and found in about ten per cent. of all English dogs, but most common in sporting dogs, especially greyhounds and harriers, due to the fact that they eat the intestines of rabbits, etc., in which dwell the larval form of this parasite. This parasite during its *development* undergoes two Biatomes, or life-

cycles, viz. (1) From the egg to the cysticercus; (2) Cysticercus to mature worm. The middle stage is called the Cyst. pisiformis. It takes two months to develop from egg to cysticercus, and one month to mature worm when artificially produced, but much longer naturally produced (Cobbold).

Tænia cœnurus, or Gid tapeworm, is of great importance, on account of its larval form giving rise to Gid in sheep, as previously stated. It is 18 to 24 in. long and principally seen in the small intestines.

Tænia marginata is the largest cestode infesting the dog, and somewhat resembles the pork-tapeworm of the human subject. They vary in length from five to eight feet, and are found in the small intestines of about thirty per cent. of our English dogs; its larval form, Cyst. tenuicollis is found in the mesentery, etc., of sheep. In the treatment of cestodes I find that extract of Male-fern, in from six to twenty drop doses, the most effectual, but have also given Areca nut in ℥ss. to ℥i. doses, and a pill consisting of Colocynth three grains, Jalap eight grains, varying according to size, age, and condition of dogs, as I have found very small doses of any vermifuge not only give rise to violent symptoms, but all produce death; too much care cannot be exercised, therefore, in giving any vermifuge to young animals.

Ectozoa.

This class of parasite give rise to numerous diseases of the skin in our domesticated animals, and may be classed under two heads, viz., animal parasites or dermatozoa and vegetable parasites or dermatophyta. The animal parasites are (1) those which produce scab, itch, mange, etc., in all animals and this class may be again divided into three classes, viz., *Sarcoptes*, or those that burrow in the skin; *Dermatodectes*, that only bite the skin, and *Symbiotes*, or simply pierce the epidermis. This is Gerlach's classification. All these parasites live on serosity due to the effusion caused by the irritation which they excite. Either one or more of these varieties affect all our domesticated animals, viz., all three varieties have been found on the horse and sheep; and two in the ox, viz., dermatodectes and symbiotes; and one in each of pig, dog, and cat. The sarcoptic variety of the horse and dog is easily transmitted to man. To distinguish between the different varieties, place a fresh scale in the sun; and if sarcoptes are present, they will soon be found all on the underneath surface, whereas the dermatodectes are on the outer surface. Again, the sarcoptes are isolated, whereas the symbiotes and dermatodectes live in clusters. Thirdly, the symbiotes do not burrow, but merely bite the skin, and principally invade the limbs.

Treatment.—In the horse I have found the following receipt very effectual, viz., ℞ Sulphur ½ lb., ℞ Pul. helebore j℥, Ol. turps iij℥, Whale oil xii℥, Carbolic acid ij℥; mix and apply three successive days, then wash off and again apply; but in the dog I have tried Prof. Williams' remedy with a fair amount of success, viz., ℞ Creosote, ℥iii., Olive oil ℥vii., Sol. potassæ ℥j., and Sulphur ½ lb., also Train oil, Spirits of tar. I have found the first one almost certain cure in cats.

The second class of animal parasites are the *Epizoa*—those which live upon the skin, and are the lice, fleas, ticks, etc. The first is the one the veterinary surgeon is more often called upon to treat, and I have found the Pul. staphisagria very effectual in the following proportion:—℞ Pul. Staphis. 1 lb., Sapo mollis 1 lb., Aqua fervens ½ gall.; let stand all night, then add ½ gall. more water, 1 lb. more soap, and apply to the skin warm.

The second class of ectozoa, or those produced by vegetable parasites, are of two forms, viz., the *Tænia tonsurans*, or common ringworm, seen in most of our domesticated animals, and (2) the *Favus*, or honeycomb ringworm. The first is the only one I shall describe, as the latter is seldom seen in this country. The *Tænia tonsurans* is due to a cryptogamic parasite, the

Triophyton, which is seated in the interior of the roots of the hair, which after a time lose their elasticity and break off, leaving the fungi in the form of a greyish white bran-like incrustation, thus differing from favus, which are yellow, covering the epidermis. It may affect any part of the body, but principally seen on the head, face, neck and hind quarters; very prevalent amongst young cattle. It is very contagious, and may be communicated from one animal to another, and from animals to man. It more often affects badly-fed and cared-for beasts, but it is not confined, as many well-fed beasts, carriage-horses, etc., are liable to become affected.

Treatment.—I generally cause the affected parts to be well washed with soft soap and warm water, removing as much as possible of the bran-like scales, and apply the common iodine ointment at once. I have one or two farmers in my district who applied common mustard, as mixed for the table, with a fair amount of success.

Gentlemen, I am very sorry that I could not attempt a more interesting study, but I hope at some future meeting of our society, when I have seen a little more practice, to give you some paper on a more interesting pathological subject, but as I said in the beginning, a discussion may arise which will be beneficial to all present. I must apologise for not treating the ectozoa more fully, but I did not commence that part of my subject till last evening, and therefore must plead want of time.

The PRESIDENT: Mr. Gooch, you have no reason to make any excuse for not having gone fully into the subject. I have been very much pleased with the manner in which you have handled the subject. You have gone fully into it, and that paper must have cost you a great deal of labour, and every one present will agree with me in according you their very best thanks for the labour you have bestowed on the very interesting paper.

The vote of thanks was adopted by acclamation.

Next Meeting.

On the proposition of Mr. Hartley, seconded by Mr. Gooch, it was resolved that the next meeting should be at Louth, at 12 o'clock (noon), in September.

Mr. Gooch's Paper.

The President expressed a hope that the meeting would sanction the sending of this paper to the veterinary journals for publication, and the official reporter to the Society (Mr. W. Mason, of Gainsboro') was so instructed. Several interesting pathological specimens were displayed by Mr. Gooch, in illustration of his subject.

Mr. FREER said: He should like to himself thank Mr. Gooch for the very careful way in which he had prepared his paper, and to offer a few remarks thereon. As to the lumbricoid worm, he saw that Mr. Gooch had used santonine. He had not seen much benefit from santonine, but probably one of the finest remedies was sulphate of iron, given in large doses with potassa tartrate of antimony, and in six or seven days brisk doses of aloes. For Bronchitis in calves, caused by Strongylus micrurus, he found an intertracheal injection of turpentine useful in checking the disease. It so happened that he had seven or eight young Irish beasts of his own suffering from this complaint, so he picked out the worst and gave it one dram of turpentine with chloroform and glycerine, and it had no effect upon the steer beyond producing a little coughing. Although in seven or eight different cases he had administered strong doses of turpentine, he found that two doses of this medicine administered *intertrachea* absolutely cured them. If taken in time, he believed this was a remedy of great service and value. One particular in the administration was that it was not at all unlikely that instead of the instrument going into the trachea it would only penetrate the

tissues and cause effusion; but if the pipe was pushed well into the trachea there would be little or no effusion to be seen afterwards. He thought that, particularly if taken in time, with other remedies, such as hygiene, it would be found to be of a very serviceable character.

Captain RUSSELL also desired to thank Mr. Gooch for his very interesting paper, which must have given him a great deal of trouble, for which the Association were very much obliged. It was a subject of great interest and importance, for he believed there were more diseases due to the presence of parasites than they were aware of. Referring to inter-tracheal injection, he thought it took up so much time and was such a very great deal of trouble, for they almost required the points of their injection instruments to be made for the job, and then they had to lance the skin, and push the point into the trachea, that it was hardly worth while. His points were not strong enough, and he had to make a little hole to push the instrument into the trachea, and take what care they would, they would still have one or two cases in which it got into the tissues adjoining, and there would be a swelling, but a swelling of no importance. He held that when they had plenty of time and care was used, it was of great importance, but when animals were very bad no great good was done. He used for this disease turpentine, creosote, opium, and chloroform. In a case he had last week, the larynx appeared to be perfectly paralysed, and the structures of the epiglottis and larynx so inflamed, that they were not able to collapse, and every mouthful went down into the animal's lungs, and a great portion of it oozed out of the tracheotomy tube. That animal did not die from inflammation of the lungs, but from the result of the foreign agents, and exhaustion, and in ten days it was dead. When he tried to pass the tube into the œsophagus it passed into the trachea. He could pass his finger over the epiglottis without any obstruction at all. He reminded them that many medical men in Germany treated their patients by tracheal injection, whether human or veterinarian, and suggested a trial of the remedies. As to the *Strongylus tetracanthus*, in opening the body of a horse he found that the cæcum was burst; there were at least a bushel of these parasites in the cæcum, and it looked just like malt coomb; the whole cæcum was full of them. He almost invariably found the Strongylus armatus outside the fat of the kidneys, as well as in the inferior mesenteric artery outside the intestines, and in the pelvis. They got Welsh ponies, and when two years old they often died, being infested with this Strongylus armatus.

Mr. HARDY asked if any one had ever seen a case of ruptured stomach from bots, and all replied in the negative. Mr. Hardy said he found the animal to which he referred in a dreadful state, and it died, and he made a *post-mortem* examination, and the stomach was full of thousands of bots, which had eaten through the coats of the stomach and ruptured it.

Mr. FREER, in answer to a question, said he procured the instrument he used for inter-tracheal injections from Messrs. Arnold. As to Mange, he had found a free application of mercurial soap useful. He once saw half a pound applied to a cart-horse with no bad effect.

Mr. HARTLEY said as to the inter-tracheal injection, he had seen some cases in which Capt. Russell operated, and he should like to know how they progressed.

Capt. RUSSELL said five cases got better with the creosote, opium, chloroform, and turpentine.

The PRESIDENT asked Mr. Freer if he had seen any bad results from inter-tracheal injections in any instance.

Mr. FREER: No, unless you miss the trachea. It is a good plan to pass in a cannula first. I used it in fifty cases last year.

Capt. RUSSELL said he used it in forty cases with no bad results.

Mr. HARTLEY said he looked upon ether and linseed oil as a very good vermifuge.

Mr. GOOCH thought ether was good for certain sheep worms. He asked how they thought inter-tracheal injection acted—Did it kill the parasite, or only acted by expelling it from the lungs? In one case he found two specimens in the testicle of a horse. As to the ruptured stomach through bots, he thought it was caused through the number present, which would press so close together and thereby cause the rupture.

Capt. RUSSELL held that the medicine acted by suffocating the parasite, and by absorption—probably a little of both.

Mr. FREER thought the medicine stupefied them, and the animal coughed them up, but as long as they were living they maintained themselves in the lining of the bronchial tubes. He thought they were stupefied, so that they could be thrown out.

Capt. RUSSELL stated that the other day he was operating on a rig horse with his testicle inside his body, and found he had a substance to deal with of a considerable size. He made a long incision right above the internal ring, about six inches long, and found a substance about as big as a child's head, a portion of which came away. He cut it in half, and found it to be a dermoid cyst filled with hair and teeth. Was that a fœtus? was it a rudimentary fœtus attached to the testicle? The horse died after its removal, from Peritonitis.

In conclusion Mr. GOOCH thanked them, and said he quite agreed that they must be students all their lives, for the longer he lived the less he seemed to know. He moved a hearty vote of thanks to the President for his occupation of the chair, which was seconded by Mr. SMITH, of Market Rasen, and unanimously adopted.

The PRESIDENT thanked them, and hoped they would do their best to support him during his term of office.

The members afterwards dined together, a choice repast being served up by the *chef-de-cuisine* of the Albion, and the PRESIDENT proposed the toast of "The Queen," which was drunk with acclamation.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

BY invitation of the Mayor of Windsor (Sir Henry Simpson), President of the Royal College of Veterinary Surgeons, and also of the Royal Counties Veterinary Medical Association, a meeting of the above Association was held at the Guildhall, Windsor, on July 29th, when the following members were present:—Sir Henry Simpson (Windsor), Professor Robertson (London), Professor McCall (Glasgow), Professor Walley (Edinburgh), Messrs. Joseph East (Aylesbury), James East (Aylesbury), Henry Lepper (Aylesbury), Sydney Villar (Harrow-on-the-Hill), C. Carter (Guildford), J. Darling (Bracknell), W. Pritchard (London), F. B. Jones (Leicester), F. W. Hanks (Wantage), P. Irving (Chipping Norton), J. F. Simpson, J.P. (Maidenhead), Adrian Jones (A.V.D.), T. B. Goodall (Christchurch), J. G. Castle (Thame), R. J. Verney (Oxford), A. Wheatley (Reading), F. Walker (1st Life Guards), A. H. Santy (Norwich), G. A. Drewe (Abingdon), J. D. Barford (Southampton), J. P. S. Walker (Oxford), F. Raymond (A.V.D.), J. Varney (Winslow), E. C. Howard (Newbury), E. J. Mellett (Henley-on-Thames), C. N. Page (Banbury), R. P. Bull (Deddington), S. H. Slocock (Hounslow), H. J. Hunt (Newbury), A. W. Barlow (Reading), W. Wilson (Berkhampstead), J. A. Rastron (2nd Life Guards), G. H. R. Wilkins (Lambourn), and H. Kidd, hon. sec. (Hungerford).

Visitors present were: Professor Brown, C.B. (Privy Council), Messrs. Bamfield Kettle (Market Drayton), J. A. Woods (Royal Horse Guards Blue), Parker (Birmingham), J. S. Carter (Bradford), J. Burnett (Maybole, N.B.), Jas. Rowe (London), W. Mulvey (London), Herbert Darley (Windsor), W.

Whittle (Worsley), T. Briggs, J.P. (Bury), W. Woods (Wigan), W. Shipley (Great Yarmouth), E. C. Dray (London), W. D. Severn (London), and W. Deane Butcher, M.R.C.S. (Windsor).

After receiving the guests in the Council Chamber, the President invited them to partake of an excellent *dejeuner*, served in the large Hall.

Subsequently the business of the Association was proceeded with.

The SECRETARY read the minutes of the last meeting, which were confirmed. He then announced that he had received a letter from Mr. Roalfe Cox, and a telegram from Mr. Wragg, thanking the members of the Association for their support in returning them as members of the Council.

Mr. MELLETT gave notice that at the next meeting he would move that some of the surplus money in the hands of the treasurer be used for the purchase of instruments for the use of the members of the Association.

Professor Robertson's paper on "Inoculation as a Preventative against Pleuro-pneumonia."

Professor Robertson was then called upon by the President to read his promised paper. He said he had very readily consented to lead off a discussion upon inoculation for Pleuro-pneumonia, because he had just recently been engaged in preparing a paper upon the subject for a kindred Association. The paper was not finished, it required some little working out, but he had entitled it "Some remarks on protective inoculation for certain diseases of farm-stock, chiefly applicable to Pleuro-pneumonia." He commenced by stating in effect that the principle or practice of protective inoculation was based on the well-known fact that many of the acute specific diseases of animals occur only once in a lifetime, and that animals having once safely passed through the attack, are afterwards protected from further attacks. Taking the ordinary definition of protective inoculation, as the production artificially in an animal of a state of disease which, while modified so that it shall not endanger life, is yet of such a character that its existence shall confer immunity from attacks similar to that which follows an attack of the disease caught through the ordinary channels of infection, he said that although this was the ordinarily accepted definition of the term, it was probably not that which directly applied to it; it was scarcely a correct statement of the conditions which in many instances were observed to exist. Protection, it was probable, might be conferred on animals against the attacks of the natural or inoculated specific disease where the protective inoculation had not induced any disturbance sufficient to entitle them to say that the disease had been introduced. What they now meant by protective inoculation was that a power of resistance had been by it conferred on the animals against the advance of the natural disease, however it might be assailed. He then dealt with the several modes of treatment of the virus, by which protective inoculation may be secured, and mentioned that it was only within comparatively recent years that protective inoculation for certain specific diseases of animals had attracted attention. The probability of success attending a practice of this nature might be said to have originated with the recognition of the specificness of such diseases, namely, that they were the result of the entrance into the animal system of specific micro-organisms, and not, as formerly considered, from an infringement of dietetic or sanitary laws. That the entire class of specific diseases to which the former was liable might be largely controlled as regards distribution was now scarcely doubted.

Their ultimate suppression was more doubtful, seeing the great difficulties which beset the carrying into operation of those measures which science and experience had now stamped with their approval. He then directed attention in detail to some of the modes of inoculation with respect to the more important of these diseases, the first one he took up being the *specific lung*

fever of cattle, known as *Pleuro-pneumonia*, which, he said, had remained with us in greater or less force ever since its introduction in 1842. He remarked upon its apparent exclusiveness in attacking bovine stock, the uncertainty of the period of incubation, the difficulty of detection, and its power of retaining, in animals apparently recovered, the power of propagation.

Although Dr. Willems was usually credited with having originated the system which bore his name, and justly so, seeing that he probably first carried it into extensive practice, it was known as early as 1820, similar inoculations having been performed by certain scientists in Germany. Noting the extension of the operation practised by Willems to various parts of the world, he said, that having regard to all the difficulties which ever surround such a practice, the results had been so favourable as to entitle them to say that the preponderance of evidence was in favour of its securing what it proposed to accomplish. In Belgium, however, where it originated, it was stated that not to the adoption of preventive inoculation, but rather to the strict enforcement of compulsory slaughter, was that country indebted for its comparative freedom from this terrible cattle disease. Its value as a preventive of disease consisted in the influence exerted on the animal by inoculation, conferring immunity from either a fresh attack of the natural disease or from the effects of a second similar inoculation.

(2) That the danger of propagation was increased by inoculation of hitherto healthy cattle; and (3), that animals only slightly affected with the disease, but having portions of diseased lung existing in affected lung tissue, being inoculated and believed to be protected and placed with healthy animals, are nevertheless capable of spreading disease to those unaffected. Taking these arguments *seriatim*, Professor Robertson said the first was probably negatived by a preponderance of evidence. Facts appeared to indicate that protection could be afforded by the process of inoculation. With regard to the second objection, he said that from evidence adduced there did not seem to be much danger from contamination during the inoculation period. He at the same time allowed that the opposite might be taken up and argued very fairly. And as to the third objection he admitted that post-mortem examination had confirmed the suspicion that long after recovery there remain attached to the animal the power of disseminating disease, and this, he said, was not likely to be effectively provided against, if such cattle were permitted to mix with the healthy.

Passing on to the objects sought to be accomplished by preventive inoculation, he said, the first thing which was demanded of inoculation for Pleuropneumonia was that it should not cause serious complications or death; and the second was, that it should confer on the bovines operated upon, perfect immunity against the disease. Some experts and others, he said, had stated that inoculation might with advantage be carried out on the really contaminated; others had affirmed that inoculation expedited the declaration of the disease; and a third statement had been made to the effect that where the disease declared itself in animals already inoculated it was of milder form. Experiments, however, had led to the conclusions that inoculation neither modified nor hastened any period of the disease, and that it did not always give protection until a certain length of time had elapsed from inoculation to exposure—thirty days was the period generally asked for.

Coming to the effects of inoculation on the inoculated, he said that although charges had been made that inoculated animals were liable to become centres of infection, and consequently to propagate the disease, he was satisfied—not from personal experience, but judging from testimony and a mass of evidence from several independent authorities—that this could not be substantiated. The chief effects produced in the inoculated were local—

confined to the seat and vicinity of the operation. The period over which the local effects extended was from the fourth to the twentieth day. In a few it would be longer. He then detailed the appearance of the part operated upon during succeeding days, and went at length into the methods of gaining the best material and preparing it for inoculation. He advocated on the lines of Pasteur, namely, by the preparation of a modified virus, safe in its action, capable of being controlled, perfectly innocuous to animals operated on, and satisfactory in its power of preservation. It seemed to him that this might be done by the pure cultivation of micro-organisms which seemed to be invariable in the production of the disease. Some further remarks on material were made, and then the exact situation in the body and mode of making the punctures were dealt with. With the greater number of foreign and home operators, some portion of the tail was preferred, because of the ability with which they could shake off or remove some part of it when inoculated if needful. After stating the various modes of injection, he concluded his remarks on this portion of his paper as follows: Now, gentlemen, the important practical outcome of all that has been, appears to be capable of being formulated in two rather inharmonious statements: (1) That, according to the experimental teaching of several operators in this country, and of a large number on the continent and in our colonies, it is as stated by M. Bouley at the congress at Brussels: "That experimental proof is now made that it is possible to invest animals with immunity against Pleuro-pneumonia by the inoculation with the virus of the disease;" but the immunity so conferred is stated to be of uncertain duration. (2) The testimony, upon a large scale, of certain communities where this disease has existed, where inoculation has been carried out is: that if freedom of a country from Pleuro-pneumonia is to effected, it is not to inoculation so much as to isolation and slaughter of the actually diseased, and probably of such as have been herded with them, that we must trust. In the present state of this controversy if a Bill were introduced to legislate, with a view of modifying the disease in any extensive territory, I should be disposed to advocate that the animals affected should be confined within the district in which the inoculation is to be carried out (applause).

Professor ROBERTSON also dealt with inoculation as a preventive against Anthrax and other diseases.

The PRESIDENT having invited discussion,

Professor MCCALL, while agreeing in most respects with the remarks of Professor Robertson, more particularly in regard to what he had said about Pleuro-pneumonia, wished to ask whether Professor Robertson believed that the virus of small-pox and vaccine virus were one and the same. He believed these were distinct. Could one specific virus so act upon the constitution of an animal when inoculated, or when introduced into the body of the animal by the natural method, as to check and counteract and destroy the action of another specific virus?

Mr. WILSON asked if it were certain what the micro-organism producing Pleuro-pneumonia was.

Replying to Professor McCall, Professor ROBERTSON said he believed that the larger portion of the medical profession regarded the vaccine virus as small-pox virus modified by passing through a cow. He had, however, merely alluded to it as one method of inoculation. He did not say which idea he himself believed in, for he was afraid he must say that they had no very definite conclusion to go upon. In answer to Mr. Wilson he said he did not think it was known what the micro-organism producing Pleuro-pneumonia really was. According to the latest ideas it was thought not to be a bacillus, but a micrococcus or tricoccus.

Professor MCCALL then expressed his opinion that when an animal had once

had Pleuro-pneumonia and recovered from it, it never took the disease again. He believed that after the first attack some portion of the lungs remained affected, and, although the animal might live for years afterwards, at some period or other the disease burst out again. This conclusion was from his own practical experience. Having understood Professor Robertson to say that inoculation simply produced local action, he differed from this opinion. If there is no action beyond the tail, where it is inoculated, then the animal could not by that inoculation be rendered proof against the disease. Then, too, ten days sometimes elapsed before there was any manifestation of the operation. He held that if there was only local action, it would be exhibited at once. He advocated the inoculation of calves as a preventive against the disease just in the same way that children were vaccinated to protect them against small-pox.

In reply to Mr. Wilson, Professor McCALL said that there were variations of temperature during the time the animal was undergoing the disturbance occasioned by inoculation. He then gave a detailed account of some experiments he had recently made at Glasgow, from which he had come to the following conclusion—That an animal once having had an attack of Pleuro-pneumonia never had a second attack; that an animal may be labouring under lung disease by natural method, and may or may not be successfully inoculated; and that if an animal is sound at the time of inoculation, and if a period of a fortnight is allowed after the animal has recovered from the inoculation, it may be with perfect safety put into a herd where Pleuro-pneumonia is raging, and it will stand and be a monument of inoculation.

Professor BROWN, after stating that this question, which had been resuscitated in the last year or two, was thoroughly worked out a quarter of a century ago, spoke of the modes of obtaining virus, and of performing inoculation as mentioned in Professor Robertson's paper, and indicated more refined methods. He pointed out the extreme difficulty of determining what are the micro-organisms connected with lung disease. He further said, that to determine which of the organisms was the particular one upon which the disease depended, involved a life-time of work. As to the efficacy of inoculation, he admitted that evidence to a certain extent went to prove that immunity was conferred by it on the animal system if it was not already diseased, which it very often was, before inoculation; he nevertheless characterised the method of procedure as one worthy of the dark ages of veterinary science. Noting that veterinary surgeons practised the operation generally when an outbreak had taken place, and that when one case was detected there were others in the same herd which could not be detected, he said he objected to inoculation, *because the operation did not in any way interfere with the progress of the disease.* He put it to them, as veterinary surgeons, did they desire to stamp out the disease or not? He strongly advocated the slaughter not only of animals suffering from the disease, but of all those directly in contact with it, as well as those which could in any manner have been exposed to the infection. He urged them to take this course in the interests of agriculture, for, he said, the whole experience of scientific and practical men, as far as it could be traced back, was to the effect that inoculation arrested or modified the progress of the infection for a time, but never stamped it out. And the fact which was true in Dr. Willems' time was still true, when inoculation was practised to stamp out the disease, there it was most rife. These were simple facts which came under his notice as the head of a department which received information from all quarters of the globe. He pointed out that the end and aim of the medical profession was to save life, but the end and aim of their profession should be to put England in the proud position of being, in regard to its live stock, the healthiest country in the world. If they, as members of a profession,

made up their minds it should be, it very quickly would be so. The most valuable animal that ever lived did not exceed three figures in value, and it was a question of three figures against the welfare of the whole race centred in that one valuable animal. His views had not altered for some time. He did contend that against this very imperfect protection, which was of very limited value, as they carried out the operation now, there was to be set the enormous danger of extension of the disease by setting free a number of diseased animals which would be sent over the country with a sort of certificate attached to their hind quarters—that they had been protected from the disease from which they were actually suffering.

Professor WALLEY thought it was a grave reflection upon their profession that many of the contagious diseases of cattle, sheep, and pigs had not been suppressed years ago. He quite agreed with Professor Brown that the lives of animals and the lives of men could not relatively be spoken of, there was nothing to prevent the killing and getting rid of the diseased animals. And yet here they were to-day in the position they were forty years ago, with Pleuro-pneumonia even more rife in some districts, with Glanders more rife, in spite of this being the centre of the efforts of the Privy Council, and with other diseases equally as rife. He pointed out that Pleuro-pneumonia was still existing in Belgium, although it was the home of Dr. Willems. With regard to a second attack, he asked Professor McCall to account for a simple fact that had come under his own observation again and again, namely, that an old lesion appeared side by side with a recent lesion? He argued that if the natural disease did not protect the animal, how could artificial disease protect it? He said most positively that an animal could have a second attack. While he declared himself not to be an opponent of inoculation if the disease were confined within narrow limits, he said that his experience of inoculation and of the exposure of animals to others who had been inoculated and were supposed to be immuned, was that it was a most dangerous thing. So long as inoculation continued they could not wonder that Canadians, for instance, refused to buy our cattle and our herds, and the value having deteriorated they could not wonder that veterinary surgeons were not then called in. If they wanted to be called in they must keep up the value of the animals. If they allowed a disease like this to go about and prevent foreign trade they must expect the decrease in value to continue, and the butcher to be called in instead of themselves. He held that inoculation produced an effect on the blood as well as local disturbances, swellings generally being found in various parts of the body. He noted a remark of Professor Brown's that this matter was worked out twenty-five years ago. How, he asked, had it been settled?

Professor BROWN said he meant that when the thing was worked out the conclusions come to twenty-five years ago were exactly the conclusions they had come to now. In the quarter of a century they had not advanced one single step.

Professor WALLEY concluded his remarks by urging that the disease must be ruthlessly stamped out, and then perhaps having crushed it, there would be a revival of trade among agriculturists, so far as cattle were concerned.

Mr. DEANE BUTCHER, F.R.C.S., having been invited by the President to take part in the discussion, thought it was a great pity that the medical profession did not learn a great deal more of what they might learn from the veterinary profession. To him it had been most interesting and instructive to listen to men who had had the apparatus for experiment before them all their lives, and had made such good use of it. Speaking of vaccination, he said that, from his own experience, he could say that if a calf were inoculated with Small-pox, and if they took matter from that calf for vaccination they would get a vaccine in all respects similar to the vaccine of the calf.

Many of the medical profession refused to use any other vaccine than that which came from vaccinated calves. That was an instance of vaccine modified by being passed through another animal, and he hoped in course of time many other diseases might be treated in the same way. He then said that if they got a local symptom, they considered something had been introduced that was not vaccine. What they wished to do was to introduce a drop of vaccine into the blood without a wound, and the more the external inflammation, the less seemed to them to be the preventive efficacy of the virus. As to the point about the second attack, he mentioned, in several contagious diseases in the human system, the first attack did not prevent a second. In conclusion he put before them the question whether it would not be wise to inoculate every calf as soon as it was born, and not wait for an outbreak of disease.

On the motion of Mr. RAYMOND, seconded by Mr. WHEATLEY, the debate was adjourned.

The PRESIDENT said he was glad that they had been favoured with a discussion from such eminent men as they had there that day. They could not expect to have them there on another occasion. He moved a cordial vote of thanks to Professor Robertson for his very valuable paper.

Mr. WILSON seconded, and the resolution having been passed, Professor ROBERTSON returned his thanks.

A vote of thanks to the President for his services in the chair concluded the proceedings.

The company afterwards partook of tea, served in the council chamber.

H. KIDD, *Hon. Sec.*

NORFOLK AND EASTERN COUNTIES VETERINARY ASSOCIATION.

THE nineteenth half-yearly meeting of the above society was held at Great Yarmouth on July 19th, the President (Mr. W. Shipley, M.R.C.V.S.) in the chair.

Members present:—Messrs. T. Auger, Wymondham; F. Golden, Marsham; J. Hammond, Bale; R. Howard, Thetford; G. Hunting, Stalham; H. Newson, Beccles; J. D. Overed, Blofield; A. H. Santy, Norwich; S. Smith, Lowestoft, F. W. Wragg, London; and the Hon. Secretary.

Visitors:—Professor Robertson, Principal R.V.C.; Messrs. Carroll, Yarmouth; P. Turner, Old Newton, Suffolk; Bostock, 19th Hussars; W. Shipley, jun., student; J. B. Martin, Rochester.

Letters regretting their inability to attend were received from Dr. Fleming, Sir H. L. Simpson, Mr. Banham, Mr. Carter, and Mr. Briggs, and one from Mr. R. Cox, thanking the members for their support in his re-election to the Council.

The minutes of the last meeting were read and confirmed.

Mr. SHIPLEY read a short but very instructive and practical inaugural address.

Designs for a stained glass window to R.C.V.S. were submitted to the meeting. Considerable discussion ensued as to the appropriateness of one sketch. It was finally decided, on the motion of Mr. OVERED, seconded by Mr. HOWARD, "That this association approves of the design of window laid before them, and that Mr. Santy be instructed to bring it before the Council at its next meeting; and should the Council approve of the design, Mr. Santy is to instruct Mr. Constable to place the window in the College at the price named."

New Members.

Mr. Turner, Old Newton—proposed by Mr. HOWARD, seconded by Mr. OVERED.

Mr. T. E. Barcham—proposed by Mr. SANTY, seconded by Mr. HUNTING.

The PRESIDENT next called upon Professor Robertson for his discourse on "Preventive inoculation of certain diseases of farm stock," commencing with Pleuro-pneumonia.

Professor ROBERTSON read a most elaborate and exhaustive paper; produced much evidence both *pro* and *con*, recounting a great number of experiments which have been tried at various times and places, and finally gave it as his opinion that in Pleuro-pneumonia inoculation is not sufficient to arrest the spread of the disease. He believes it to be thoroughly effective amongst the herd affected, and even if some of the animals are slightly diseased it will arrest its progress; but if such animals, slightly tainted, are brought in contact with a fresh herd not inoculated, they will be found capable of contaminating such animals. He therefore considers that when Pleuro-pneumonia breaks out in a herd of cattle, they should be inoculated, but kept perfectly isolated, and fatted as soon as possible.

Professor ROBERTSON next referred to Anthrax pure and simple, and that form of Anthrax commonly known as "Quarter-ill." After referring to experiments of Pasteur and other eminent scientists in France, he described some which he had been recently carrying on in this country with reference to Quarter-ill. The results were much more satisfactory than in Pleuro-pneumonia, and if the intravenous injection method of inoculation be adopted it was an almost certain preventive. The results of his own experiments went to prove that when the above method of inoculation was adopted, the animals enjoyed perfect immunity from contagion, even when the virus was injected into the blood.

A most lengthy and animated discussion followed.

Mr. SANTY and Mr. OVERED gave particulars of a number of experiments which they tried some years since for Pleuro-pneumonia. The results were very satisfactory, and in very few cases did any untoward consequences follow.

Mr. OVERED operated with Mr. Smith, of Norwich, on behalf of the Norfolk Chamber of Agriculture, on over 200 head of cattle; he introduced the serum from diseased lungs into the tail with a three-cornered cup-shaped instrument.

Mr. HOWARD asked the proportion of muscle juice and water used as intravenous injection in Quarter-ill.

Professor ROBERTSON said he believed it to be one in ten.

Mr. WRAGG asked if any microbe had been found in Pleuro-pneumonia. He was of opinion that inoculation in this disease was more than useless, as it was very likely to retain rather than eradicate the disease from the country.

Professor ROBERTSON said a microbe had been found, but could not say if the microbe was peculiar to Pleuro-pneumonia.

Mr. BOSTOCK gave an interesting account of Anthrax as he had seen it in Bengal, noting that, although Bengal is so much infested, Bombay is almost free. The most effective method adopted for stamping it out is to dig up the soil and remove the cattle for a time off it.

Mr. SANTY proposed, and Mr. HAMMOND seconded, that a most cordial vote of thanks be given to Professor Robertson for his extreme kindness in meeting them and giving such an excellent discourse on a subject of such vital importance to them as practitioners.

Professor ROBERTSON having responded, the next place of meeting was arranged to be at Norwich.

On the motion of Mr. OVERED, seconded by Mr. HOWARD, Mr. Wragg kindly consented to read a paper on "Examination of Horses as to Soundness."

Mr. SHIPLEY proposed, and Mr. WRAGG seconded, that Professor Robertson be elected an Hon. Associate of the Society.

Professor ROBERTSON having kindly consented to become one, the meeting terminated with a vote of thanks to the Chairman for having so ably conducted the meeting.

R. S. BARCHAM, *Hon. Secretary.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

A SPECIAL meeting and annual dinner of this Association was held in the County Hotel, Newcastle-on-Tyne, July 13th, 1887, the President (Mr. D. Dudgeon) in the chair.

Present:—Messrs. A. Chivas, Cowbridge; J. E. Peele, Durham; Thos. Jack, Sunderland; C. S. Hunting, South Hetton; Wm. Wheatley, South Shields; G. Dudgeon, Sunderland; J. Gofton, North Shields; Wm. Grieve, Blaydon; T. Foreman, Leadgate; J. B. Nisbet, Fence Houses; D. McGregor, Bedlington; Wm. Awde, Stockton; J. W. T. Moore, Whitley; J. E. Tudor, South Shields; W. Stevenson, Whitburn; C. Gresby, Beamish; H. Hunter, G. Elphick, C. Stevenson, Wm. Hunter, and the Secretary (A. Hunter), Newcastle-on-Tyne.

Visitors:—Professors Brown, C. B. Duguid, Williams, Walley, and Robertson; Messrs. Greaves, Manchester; Goldschmidt, Copenhagen; Thompson, Sheffield; Thompson, Aspatria; Robson, Penrith; Mulvey, London; Bell, Carlisle; and H. E. Wilkinson, Newcastle-on-Tyne.

The minutes of the previous meeting were taken as read.

Professor WILLIAMS then introduced for discussion the subject of Open Joint, and recommended the following treatment, which had been very successful in his own practice: first sling the horse, and if the wound is recent, cleanse thoroughly and apply a weak solution of corrosive sublimate (1 part in 200 of water), then dust the part with iodiform powder, and apply a piece of lint steeped in varnish (brown shellac preferred), then bandage, and do not remove it unless there is very great pain. If the joint has been open for a few days inject into the joint a weak solution of corrosive sublimate, and then treat as above. Professor Williams then proceeded to relate some novel symptoms witnessed in a recent outbreak of Influenza.

After these subjects had been shortly discussed, Mr. MULVEY proposed a vote of thanks to Professor Williams for his interesting paper, and moved that the further discussion of it be left over until the next meeting, which Mr. NISBET seconded, and it was carried unanimously.

After a vote of thanks to the Chairman the meeting terminated.

The annual dinner of the Association was subsequently held in the County Hotel, the President (Mr. D. Dudgeon) in the chair, and Mr. Henry Hunter in the vice-chair. After dinner the usual loyal toasts were given, and a very enjoyable evening spent, which was enlivened with the harmony of several of the members and guests present.

The meeting was one of the largest and most successful ever held by this Association, and reminded old members of the meeting held during the last visit of the Royal Agricultural Society to this town.

ANDREW HUNTER, *Hon. Sec.*

GLASGOW VETERINARY COLLEGE.

THE summer session of this institution terminated on June 27th, and on July 16th, 18th, and 27th the oral examinations of the Royal College of Veterinary Surgeons were conducted within the Museum of the College. The Board of Examiners included—Dr. Fleming, F.R.C.V.S.; Mr. J. Roalfe Cox, F.R.C.V.S.; Mr. Duguid, F.R.C.V.S.; Mr. Pritchard, F.R.C.V.S.; Mr. J. Vaughan,

F.R.C.V.S.; Mr. W. A. Taylor, F.R.C.V.S., Manchester; Mr. W. B. Walters, F.R.C.V.S., Army Veterinary Department; Mr. Geo. A. Banham, F.R.C.V.S., Cambridge; Mr. Archd. Robinson, F.R.C.V.S., Greenock; Mr. Henry W. Stevens, M.P.S., F.R.C.V.S., and Mr. Richard Rutherford, F.R.C.V.S., Edinburgh. The following gentlemen were also present as *ex-officio* members, viz.:—Principal M'Call, Professors Cooke, M'Queen, and Limont, Glasgow Veterinary College. Twenty-nine students presented themselves for the "A" or first examination, and of this number nineteen were successful in passing, viz.:—Messrs. Beanland, C. Dunn, T. Dunn, Ferrie, Gregg, Gilmour, Griffen, Graham, Kinnear, Maxwell, M'Dougall, J. H. Wilson, Potts, Peat, S. R. Thompson, D. Warnock, M. Wilson, W. Wilkinson, and J. Watson. Dr. Limont and Mr. Marcus Stevenson passed the "B" examination, and Mr. Robert B. Scott, Ayr, obtained the diploma of the Royal College of Veterinary Surgeons. Medals granted by the Highland and Agricultural Society of Scotland, and certificates of merit by the College were awarded in the different branches of study as follows:—Botany—Medallist, Mr. J. Beanland; first-class certificates, Messrs. D. Warnock, Thompson, and Ferrie; second-class certificates, Messrs. M. Wilson, Maxwell, C. Dunn, and M'Dougall. Chemistry—Medallist, Mr. Warnock; first-class certificates, Messrs. Thompson, Beanland, M. Wilson, and Dunn; second-class certificates, Messrs. Maxwell, J. Peat, Kinnear, and Pitcairn. Materia Medica—Medallist, Mr. Warnock; first-class certificates, Messrs. M. Wilson, Beanland, and S. R. Thompson; second-class certificates, Messrs. B. Ferrie, J. M'Dougall, and H. Potts. At the close of the examinations, the Chairman intimated that the following students had passed with "great credit," viz.:—Dr. Limont, Messrs. Gregg, Warnock, and M. Wilson.

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

THE Eleventh General Meeting of the above Society was held at the Bush Hotel, Carlisle, on the 1st of July, with A. J. McIntosh, Esq., President, in the chair.

Members present were Messrs. Carlisle, Bell (senior), Bell (junior), Dawson, McCauly, of Carlisle; McConnell, Castle Douglas; Harrison, Warcop; Croudace, Haltwhistle; Little, Abbey Town; Coats, Carruthers, Brampton; Potts, Donald, Wigton; Thompson, Aspatria; Armstrong, Penrith (Secretary). Visitors: Messrs. Ashley and Wilkinson.

Letters of apology were read from the following:—Messrs. Greaves, Manchester; Young, Cockermouth; Walker, Kirkby Lonsdale; Watson, Ireby; Tallentire, Skelton; Rendall, Barrow-in-Furness; Chalmers, Longtown; Pears, Langholm; Pears, Penrith.

The minutes of the previous meeting were then read by the Secretary, and confirmed.

Messrs. McConnell, Castle Douglas; McCauly, Carlisle; Carruthers, Brampton, were unanimously elected members of this Society. Messrs. Roberts, Liverpool; Mulvey, Bishop Auckland, were also unanimously elected honorary members of the Society.

Mr. BELL moved that the copy of rules for the loan of instruments—the property of the Society—be accepted as drawn up by the Committee.

Mr. ARMSTRONG seconded the motion, which was carried unanimously.

Mr. HARRISON, Warcop, then read a highly interesting paper on some of the diseases, etc., of the uterine system in bovine animals, with short discourses on Milk Fever and Red Water.

After a few introductory remarks on quackery and the advertising of veterinary specialties, Mr. Harrison proceeded to read his paper:—

MR. CHAIRMAN AND GENTLEMEN,—The organs of generation in the female

which we have to take into account when called upon to give advice or administer treatment are the *vulva*, *clitoris*, *meatus urinaris*, *vagina*, *uterus*, *fallopian tubes*, and *ovaries*. A simple or complex disarrangement of any one or more of these organs in any female animal leads to results which not only tax our skill in arriving at what may be called a probably correct diagnosis of the cause of the affection, but very frequently there is danger of not being able to satisfy our employer with either any treatment we may adopt, or any explanation we may tender to him *viva-voce*. The first abnormal condition of one of those organs which I shall bring to your notice is one which is very frequently observed, especially in large herds of shorthorn cattle. A farmer or stockowner informs you he has such and such a heifer which is continually or almost so in heat, very restless, and either will not take the bull, or if she does, no conception follows. A glance at an animal of this description tells us she is characteristically imperfect in her generative apparatus; vagina contracted and small, and scarcely any appearance of either udder or teats, heavy fleshy head, thick neck, and what may be called bullock horns. From their continual restlessness they are not only a torment in themselves, but a nuisance amongst a stock, as they not only will not thrive themselves, but hinder others from doing so. What are we to do if called upon to prescribe for such an animal? I have not myself examined *post-mortem* the uterine organs of such an animal, but authorities tell us that the cause of this condition is due to excessive vascularity of the *ovaries*, amounting to what may be termed chronic congestion. Being of opinion that very little good can be done, I have confined my treatment to a couple or so of doses of purgative and diuretic medicine, and recommended a good clearance out the best way practicable. Bleeding, repeated purgatives, counter-irritants, liniments or embrocations across the loins and along the back have been recommended, but viewing the general conformation of such an animal, such treatment is very likely to disappoint a client, and not give much credit to a veterinary surgeon.

The next complaint I offer to your notice is one not unfrequently seen in a general country practice, and occurs mostly in cows, seldom if ever in heifers during the period of gestation. It is not much noticed during the earlier periods, but towards the approach of the full term, the cow is noticed to be unusually large in the abdomen, so much so that twin calves are expected. It consists in an excessive and undue secretion of *Liquor amnii* of an abnormal character, due most likely to a morbid condition of the uterine mucous membrane. It has been described under the appellation of Dropsy of the Uterus, but as Dropsy does not as a rule find its seat on mucous surfaces, I suggest that this view of the case may be fairly discarded. The attention of the veterinary surgeon is usually called when the cow is preparing for parturition, labour pains have been visible for some hours, perhaps a day or two, but no attempts to calve. Not unfrequently the empiric aid is sought, when it is found there is no passage, the Os uteri being closed, and it is concluded there is nothing but an operation to part the mother and fœtus, hence the call for veterinary aid. But I hardly need tell many of you how careful to be when approaching these cases; generally we find the cow is in no way prepared for calving, the udder is flaccid and empty, the pelvic ligaments are scarcely if any relaxed, no discharge of any kind has been seen from the vagina. The cow lies a good deal, and often from her large size has difficulty in rising and walks with a staggering gait, but at the same time she chews her cud and her appetite is in no way impaired. I hardly need tell you that as long as this state of things lasts it is unwise to be too hasty, at the same time it is as well to instruct our client that when changes occur we will be prepared to assist in removing the calf. A cow may linger on a week or more in this state, but eventually the pelvic ligaments begin to relax, and

a slight and gradually increasing discharge escapes from the vulva, the udder becomes more distended, and generally the signs of parturition become more pronounced. On examination, the Os uteri will be found to be gradually dilating, so much so that two or three fingers may be introduced. At this stage some practitioners resort to injecting some water, which is said to break the fœtal membranes in four or five hours, when they proceed to extract the calf. Empirics, I suppose, add a little colouring matter to the water to make it look more mysterious, and at the same time make a prophecy, but this kind of humbug I think professional men should despise. In some instances if the cow has not been properly watched, the fœtal membranes may have broken, and the Liquor amnii may have escaped, and perhaps a large portion of the placenta be protruding. The cow having thus become reduced in size, presents a sickly look, labour pains gone, and the calf has to be extracted in whatever position it may be by manual dexterity, unaided by any effort on the part of the mother. The calf is generally dead and looks as if it had been macerated in hot water for some time.

The practice I would suggest to the meeting is, in such cases, as soon as the Os uteri is sufficiently dilated to admit a hand, to cut the fœtal membranes, thus letting out the water, then bring the calf into position by means of cords or hooks, and extract it. It is as well to remove the placenta also, and I generally give two or three doses of whisky, or other stimulant, to assist in restoring a balance in a weakened and deranged circulation. Also order plenty of good nourishment. By this aid, and by injecting some antiseptic into the uterus, the cow is very often saved, while without such auxiliary treatment she might have died from exhaustion or from uterine absorption causing Septicæmia. As to the cause of this condition of the uterine mucous membrane, which conduces to this unnatural and excessive secretion of Liquor amnii, I have no opinion of my own, but seeing that it is not only a fact, but quite possible for deleterious matter to be conveyed in the act of coition, which in a variety of ways may act specifically, and also since this new Pasteurian philosophy of bacilli or bacteria has become such an important element in elucidating the causes of disease, I would ask this meeting in the discussion to express its views as to whether or not, from causes undeterminable, the bull may have contributed the noxious element which upsets the natural order of things pertaining to a healthy gestation.

Unfruitfulness in cows and heifers is a subject which I think may fairly be noticed by a meeting of this description, seeing that veterinary surgeons are not unfrequently asked to give advice on this tiresome and vexatious question. In very many cases the causes as revealed by any history to be gathered from the owners of such animals, are almost always surrounded by circumstances of a mysterious character; consequently, unless the members of this Association are very far in advance of me as to knowledge, any assistance we can render must be strongly tinctured with empiricism or guesswork. If satisfactory results happen to follow the treatment, we get the benefit of knowing all about it; but if, on the contrary, as very frequently happens, our endeavours are futile, sentiments the reverse of complimentary are showered down upon us, more especially if any expense has been incurred. In endeavouring to find a cause for this want of disposition to conceive, many theories have been propounded; foremost, I may mention high breeding, the occlusion of natural habits, and feeding. Further it has been argued that if by any means conception is established in these kind of cases, not unlikely the cow will abort. Now, in relation to high breeding being a cause, I daresay many of you will have observed the fact that the animals served by high pedigree bulls very often disappoint, either in not conceiving at all, or aborting at an early period of gestation, and the oftener this pro-

cess is repeated the more confirmed the habit becomes. But if, as sometimes happens, the owner, either by advice or chance, takes the animal to a bull of lower grade, ten to one on she conceives at once and carries the embryo the full time. If this view is conceded, the point for the meeting to discuss is the difference in procreative or other specific quality of the seminal fluid of high-bred bulls and those of ordinary breeding. I do not myself pretend to offer any physiological hypothesis bearing upon the potential quality of what may be called "blue bloods," but I think, gentlemen, there is one circumstance in regard to stock management, more especially in holdings where high farming proclivities prevail, which we, as a profession, cannot be blind to, and that is the further stock is reduced from natural food and natural habits to artificial feeding and luxurious pampering, the more liable they are to become defective in fruitfulness, and as, so far as I am aware, no medical treatment can be administered with certainty of success, I think, even at the risk of giving offence, the best thing we can do in the case is to advise that the animal should be turned out to grass in company with a male animal used and kept for ordinary service. I may just mention that M. Bouillard found in mares which were constantly sterile, that after the injection of a glass or two of warm water into the vagina, they were impregnated at the first covering. His argument seems to be, that water at the temperature of the blood holds in suspension the seminal fluid, and preserves its fecundating power for a longer period. There are, in connection with this subject of unfruitfulness in cows and heifers, certain causes which may sometimes be traced to atmospheric influences, such as very hot weather, etc., but as causes of this description are in a great measure beyond human control, I shall not dwell on them. There is, as I have no doubt many of you have seen, an accidental cause, due to structural derangement in the uterine passage, causing complete imperforation of the vaginal track up to the os—a condition peculiar to white animals, though why it should be peculiar to this colour I am not able to explain. Possibly some gentleman present may be able to throw some light on the subject. Many of those animals come regularly in heat; but there are no "œstral" discharges of any kind escaping from the vulva, in fact, before matters come to a crisis, there is frequently a large accumulation suspended in the uterine cavity. As a natural consequence, decomposition of this fluid takes place, producing contractions of the organ, leading the owner, in some instances, to suspect either foul play or injury from coition with a bull. In fact, any attempt at service is followed by alarming symptoms, such as continual strainings, arched back, and more or less difficulty in micturition, urine slightly mixed with blood.

(To be continued.)

EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

At the meetings of the Court of Examiners of the Royal College of Veterinary Surgeons held on 4th, 5th, and 6th July, 1887, the following students from the Royal Veterinary College were admitted members of the profession.

Mr. Thomas B. Exley...	... ...	Leeds
„ G. Goodliff... ...	... ...	Huntingdon.
„ J. R. Bathew ...	(Not yet complied with Rules of College).	
„ George Hurford ...	... ...	Plumstead.
„ W. H. Flook ...	... ...	Hampstead.
„ E. W. Larnder ...	... ...	Gravesend.
„ J. A. Legg ...	... ...	London, N.
„ W. A. Clifford ...	... ...	Plumstead.

Mr.	T. E. Barcham	Paston, Norfolk.
„	Joseph Healy	West Barnet.
„	Louis Mitchell	Leeds.
„	A. C. Newsom	Charlton, Kent.
„	Arthur Crapp	Reading.
„	Arthur Moore	Rochester.

The following students passed their Second Examination on the 30th June and 1st July, 1887.

Mr. F. B. Ditmas.
„ W. A. Stainton.
„ J. Sherley.
„ C. H. Millman.
„ *S. Vincent.
„ S. Codrington.
„ F. W. Willet.
Mr. S. J. Williams.
„ *A. D. Lalor.
„ *W. Cakebread.
„ J. A. Leggett.
„ W. W. Norwood.
„ S. T. Groom.
„ J. H. Hind.
Mr. M. W. Gatward.

The following students passed their First Examination on the 27th, 28th, and 29th June, 1887.

Mr. T. R. Vanderplank.
„ B. O. Nettleship.
„ W. T. Brown.
„ M. Jacobs.
„ *E. Porter Smith.
„ †G. J. Harber.
„ J. Millward.
„ B. L. Secker.
„ *A. Le Sueur.
„ T. W. Peake.
„ E. W. Oliver.
„ T. W. Greenlaw.
„ J. C. Callow.
„ *E. E. Martin.
„ *J. Gosling.
„ J. Wilson.
„ J. Brown.
Mr. A. W. Bland.
„ W. E. L. Brame.
„ *E. C. Storey.
„ †E. D. Johnson.
„ J. E. Abbott.
„ *H. Millward.
„ J. O. Cobbledick.
„ †T. Slepper.
„ *J. W. Coe.
„ R. Halpin.
„ A. E. Seath.
„ G. Upton.
„ *A. Bramall.
„ H. S. Eglington.
„ J. H. Halseberg.
„ *H. D. Chorlton.
„ F. W. Emery.
Mr. W. A. Welch.

Marked thus * passed with Great Credit.
„ † „ „ Very Great Credit.

ARTHUR W. HILL, *Secretary, R.C.V.S.*

THE EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS IN SCOTLAND.

AT meetings of the Scottish section of the Board of Examiners, held in Edinburgh and Glasgow, on and between July 15th and 28th, the following gentlemen passed their Final Examination, and were admitted members of the Royal College of Veterinary Surgeons:—

Dick College.

Mr.	E. Watson	Belfast.
„	E. Morgan	Nonington, Kent.
„	R. Tibaldi	India.
„	J. Troughear	Heskett, Cumberland.
„	W. Lawrence	Durham.
„	R. Edmundson	Frodsham, Kent.
„	J. Hawke	Cockermouth.

New Veterinary College.

Mr. T. Watson	Beverley.
„ H. Race	Manchester.
„ F. Armstrong	Penrith.
„ A. D. Dunbar	Aberdeen.
„ J. Dickie	Irvine.
„ T. Chalmers	Annan.
„ W. R. J. Mitchell	New York.
„ R. Shenton	Bakewell.

Glasgow College.

Mr. R. B. Scott	Ayr.

The following passed their Second Examination :—

Dick College.

Mr. J. R. Jones.
„ J. Lyons.
„ C. Nicholson.
Mr. J. O'Donoghue (G. C.).
„ W. G. Barnes.

New College.

Mr. H. R. Love.

Glasgow College.

Mr. M. J. Stevenson.
„ W. Limont, M.A., M.B. (G. C.).
Mr. Alex. Veitch.

The following passed their First Examination :—

Dick College.

Mr. S. Clarke.
„ W. McCartan.
„ H. G. Rodgers.
„ A. Dowdall (G. C.).
„ A. J. Robertson.
„ J. Gilmore (G. C.).
„ J. Hewson.
„ L. Fairer.
„ W. A. Potts.
„ W. Hawthorne.
„ G. B. Langran.
„ W. McQuatt (G. C.).
„ E. Montgomerie.
„ J. E. Miller.
Mr. J. C. Rowlands (G. C.).
„ S. Stockman (G. C.).
„ Fred. T. Finney.
„ G. H. Yates.
„ A. E. Mettam (V. G. C.).
„ A. Richardson (G. C.).
„ A. S. Wallace (G. C.).
„ J. M. Christy.
„ P. Conacher.
„ T. W. Rogers.
„ J. Bell (G. C.).
„ W. Ackroyd.
„ F. Barling.
„ R. H. Stephenson.

New College.

Mr. T. Eastwood.
„ T. H. Dale.
„ A. D. Minor.
„ E. Franklin.
„ F. Booth (G. C.).
„ F. D. McLaren (G. C.).
„ E. F. De Tong.
„ J. Clanchy (G. C.).
„ E. H. Curbishly.
„ W. Kendall.
„ G. Stevenson.
„ E. P. Edwards (G. C.).
„ W. J. Bushnell.
„ T. G. Duggle (G. C.).
Mr. J. W. Rider.
„ E. Kellett.
„ J. Barker (G. C.).
„ W. Stothart (G. C.).
„ R. Davidson.
„ F. Dales.
„ A. W. Dows.
„ J. B. Robertson (G. C.).
„ F. Hutchinson.
„ J. W. Bate.
„ T. M. Parker.
„ C. Ward.
„ M. Cassidy.
„ R. C. Hughes.

Glasgow College.

Mr. J. Beauland.	Mr. W. E. Maxwell.
„ C. J. Dunn.	„ J. McDougall.
„ T. Dunn.	„ H. Potts.
„ B. Ferrie.	„ J. W. Peatt.
„ J. Gregg (G. C.).	„ S. R. Thompson.
„ R. Gilmour.	„ D. Warnock (G. C.).
„ T. H. Griffiths.	„ J. H. Wilson (G. C.).
„ J. M. Graham.	„ W. Wilkinson.
„ J. Kinnear.	„ J. Watson.

Those marked G. C. passed with great credit.
Those marked V. G. C. passed with very great credit.

R. RUTHERFORD, F.R.C.V.S.,
Secretary Board of Examiners.

ROYAL AGRICULTURAL SOCIETY.

AT the monthly meeting held on August 3rd, Mr. ALLENDER stated that a certificate signed by Professor Brown, Professor Robertson and Mr. Duguid, had been received certifying that no outbreak of contagious or infectious disease had occurred among the animals exhibited in the show-yard at Newcastle.

Professor BROWN had presented the following report:—

"*Pleuro-Pneumonia.*—Recently this disease has increased very considerably in England, but appears now upon the decline in Scotland. During the four weeks ending July 23rd, there were forty-one fresh outbreaks reported in England, and 105 cattle attacked, whereas in the four preceding weeks there were only twenty-four fresh outbreaks, and fifty-six cattle attacked. In Scotland in the four weeks ending July 23rd, there were twenty-three fresh outbreaks, as compared with thirty-three in the preceding month, and the number of cattle attacked was 134, as compared with 153 in the four weeks of June.

"*Swine-Fever.*—In Great Britain during the four weeks ending July 23rd, there were 687 fresh outbreaks of this disease reported, and 3,352 swine attacked by it. Of these 1,965 were killed, 1,093 died, and 174 recovered.

"*Anthrax.*—During the period above referred to there were twelve fresh outbreaks of Anthrax, in which thirty-three animals were attacked.

"*Rabies.*—There were thirty-eight cases of this disease reported during the four weeks above-mentioned, twenty of which were dogs, and the remaining eighteen were deer."

In reply to a question relating to Milk-Scarlatina, Professor BROWN had stated that the inquiry was suspended pending a reply from the Treasury to the application for the sum necessary for the carrying on the investigation.

The report having been presented,

Mr. MARTIN asked Professor Brown in what counties in England were the attacks of Pleuro-Pneumonia.

Professor BROWN could not at the moment answer the question, but he wished to bring before the Society a fact of which they had all along been afraid, namely, the extension of the infection in some cases from Scotland into this country, with the result that the outbreaks during the last month have doubled as compared with the preceding one.

The Earl of POWIS drew attention of the Council to a Parliamentary paper which had recently been published in reference to diseased cattle brought over from Ireland. A large company at Glasgow, which brings a great many cattle over to Scotland, complained that the Scottish local authorities had issued orders which make it impossible to introduce Irish store cattle. It appeared that the disease was exclusively generated in Dublin, where there

were a large quantity of dairy cows. These were kept in a bad state, with the result that the disease had never thoroughly been eradicated. In the summer these cattle were sent out to different places, even as far as ten miles from Dublin, for grazing. The suggestion contained in the paper was that the Irish Government should take measures to thoroughly stamp out the disease within the precincts of the City of Dublin by making it a separate infected area; and till that was done the Scottish authorities were quite right in restricting the movement of stock cattle from Ireland into Scotland. The North of Ireland and Ulster said they had no disease, and did not like this, but so long as the infection is allowed to go on in Dublin they must take the consequences of it, and he (Lord Powis) thought that English opinion would in this matter back up the Scotch. Until the disease is stopped within the City of Dublin, it would be wise and prudent to stop all cattle coming from thence.

In reply to Colonel Kingscote, Professor BROWN said that he had given instructions for the preparation of a paper showing the place where the disease had spread, and from what point the infection had extended. With regard to Lord Powis's statement, it would be interesting to the Council to know that an Order had been passed which would give power to the local authorities in any district in which Irish cattle might be landed to regulate the landing of those animals, and the movement of them in that district after landing. That would enable them to discriminate between the different parts of Ireland. If they chose to allow animals from Ulster to come in they could do so, while, on the other hand, if they chose to restrict them from other parts they had power to do so. This had been found necessary in consequence of the occasional introduction of the disease from Ireland. There was no doubt about this fact, as it had been detected on the landing places in this country. The Irish Government did not object to this course being taken, bnt unfortunately they did not see fit to attempt anything like measures of extermination with regard to the disease. His conviction was that it would be useless for the Privy Council in this country to attempt to apply this system till arrangements could be made with the Irish Government for securing their full co-operation.

Jurisprudence.

VETERINARY SURGEONS AND DOG LICENSES.

ON Saturday, July 23rd, before Mr. Partridge at Westminster police-court, Mr. George Bailey, M.R.C.V.S., practising at 24, Cromwell Place, South Kensington, appeared to an adjourned summons issued at the instance of an Inland Revenue officer, named Hatton, for having kept on the 26th of April last a certain dog without having in force a license as required by the statutes in that behalf, whereby he incurred a penalty of five pounds. The case had been before Mr. Partridge on a previous occasion, when the same defence was raised as that to-day, but the learned magistrate decided on convicting, and fined the defendant ten shillings. The defendant at once gave notice of appeal, whereupon Mr. Partridge adjourned the matter until to-day.

Mr. Powell was counsel for the Inland Revenue, and Mr. James MacConnell was now counsel for the defence.

It appeared from the evidence of Hatton that on the date mentioned he called on the defendant, who showed him the dog in question, and at the same time informed the officer that the dog had been sent to him to be operated on for *Prolapsus uteri*, which, it was admitted, was quite apparent. The defendant, however, refused to disclose the name and address of the owner of the dog, stating that in ten years' practice he had never before been asked to do so.

Mr. MacConnell for the defence pointed out the important principle involved in the case to veterinary practitioners. To the defendant, himself, it was a very serious matter, as no less than two hundred dogs were on an average under his treatment annually; to hold him liable to have licenses for any number of dogs that might be in his infirmary at any given time would practically compel him to relinquish that branch of professional practice altogether. The case fell within sec. 8 of 30 and 31 Vict. cap. 5; and his contention was that a veterinary surgeon could not under any reasonable interpretation of the section be said to "keep" a dog belonging to another person. The person to whom the dog belongs and who pays for its treatment and keep is the person within the meaning of the section who "keeps" it; "keeping" a dog clearly meant a keeping for protection or pleasure. The sub-section, which provided that the person "in whose custody, charge, or possession," a dog is found is to be deemed "to keep" the same, only raises a presumption rebuttable by evidence to the contrary. Nor did the statute impose any duty on veterinary surgeons to disclose the names and addresses of owners of dogs under their care, or to help the revenue in any way. The learned counsel contended that on proof that the dog was sent to the defendant for treatment the summons must be dismissed.

Mr. Partridge acceded to this view, but said he should require strict proof of the facts relied on by the defence, and as the defendant was not himself a competent witness under the statute, the further hearing was adjourned until the 6th instant for proof of the ownership of the dog and its being sent to the defendant for treatment.

On this date George Preator, a clerk lately in defendant's employ, was called, and proved that the dog in question belonged to a Mr. Skinner, and that it had been sent to the defendant for treatment.

Mr. Partridge said the owner himself should be called.

Mr. MacConnell replied that his evidence was unnecessary; besides, in a large number of cases, as where ladies were owners, or the owners reside at a distance, it would be practically impossible to procure their attendance. The evidence was conclusive, and no imputation was or could be cast against the truthfulness of the witness. The learned counsel invited the magistrate to decide the matter one way or the other, to convict or dismiss, on the evidence as it stood, so that the point might be authoritatively settled in a superior court. Mr. Partridge declined to do so and adjourned the matter *sine die*.

Army Veterinary Department.

Gazette, July 29*th*.

The Honourable Artillery Company of London.—Veterinary Surgeon Edward Coleman to be Veterinary Surgeon of the First Class.

At the lévee held by His Royal Highness the Prince of Wales at St. James's Palace on July 16th, Veterinary Surgeon (First Class) J. W. Evans was presented by the Adjutant General.

Obituary.

The Secretary of the Royal College of Veterinary Surgeons reports the following deaths:—B. Barnolby, M.R.C.V.S., Warlably, Brigg, graduated 1842; J. Edge, M.R.C.V.S., late Leek, Staffordshire, graduated 1867; F. E. Meek, M.R.C.V.S., Pateley Bridge, Yorkshire, graduated 1885; W. Lomas, Buxton, M.R.C.V.S., graduated 1871.

It is with feelings of the deepest regret that we announce to the profession the death of one of its oldest and most respected members. Thomas Walton Mayer, F.R.C.V.S., who graduated in 1835, died at his residence, Victoria Road, Aldershot, on August 7th, in the seventy-third year of his age.

Mr. Mayer commenced his career as a private practitioner at Newcastle-under-Lyme, and very shortly after obtaining his diploma was appointed Secretary to the Committee of Veterinary Surgeons, formed for the purpose of securing a legal position for the profession, and by whose exertions the Charter of 1844 was obtained.

In recognition of his valuable services, Mr. Mayer was appointed a member of the original Council, which position he held with honour and credit for ten years. He was also five times elected a Vice-President during the period extending from 1854 to 1875.

In 1855, being compelled by heavy pecuniary losses and severe family affliction to relinquish his practice in Newcastle, he obtained a commission in the Army, and served with the Turkish contingent during the Crimean war. He was afterwards appointed Veterinary Surgeon to the Royal Engineer Train, which position he held until 1870, when he was compulsorily placed on retired pay on account of age.

On retiring from the Army, Mr. Mayer was offered and accepted the appointment of Professor of Veterinary Medicine and Surgery at the Royal Agricultural College, Cirencester, and was also elected a member of the Board of Examiners. He held these positions until increasing age and bodily infirmity obliged him to relinquish them. He then went to reside in the town of Aldershot, and passed the remainder of his declining years amongst his military and civilian friends, by whose assistance he was enabled to establish a small practice.

During the whole of his exemplary life, Mr. Mayer possessed in a marked degree the confidence, esteem, and friendship of all who knew him. His simple and child-like nature, generous disposition, courteous manner, and kindness of heart, endeared him to every one. He was a worthy representative of his profession, a firm upholder of its honour and integrity, and in his earlier years a liberal contributor to its literature.

The funeral of our late colleague, which was of a most impressive character, took place, with military honours, on the 9th ultimo, at the Aldershot Camp Cemetery.

The coffin containing the remains of the deceased was placed upon a gun carriage drawn by six horses, and preceded by a firing party and the troop band of his old corps, the Royal Engineers, under the command of an officer, four officers of the Army Veterinary Department acting as pall-bearers. A number of officers, non-commissioned officers, and men followed, and in rear were the chief mourners in two coaches.

Dr. Fleming, C.B., P.V.S., was represented by the Inspecting Veterinary Surgeon, Aldershot, Colonel Jelf, R.E.; I.V.S. Walters, Appleton, and Hinge; V.S., 1st Class, Duck, Poyser, and Wilson; V.S. Hagger, Savage, Short, and Rutherford.

The death is announced at Charleston, U.S.A., on July 26th, of H. W. Ravenel, LL.D., the eminent American botanist who, in 1880, was, with Professor Gamgee, appointed by the United States Government to investigate the cause of the Texas Fever of cattle. The learned and exhaustive report of this gentleman established the fact that the disease did not originate from eating a poisonous fungus, to which, up to that time, it had been attributed.

Notes and News.

PROTECTIVE INOCULATION FOR ANTHRAX.—M. E. Nocard has recently published some instructive statistics relative to the results of the anti-anthrax inoculations practised during the last five years with "vaccine" prepared in the laboratory of M. Pasteur. The following figures will be noted with interest:—

	Cattle Inoculated.	Mortality.	Percentage of Loss.
1882	29,916	82	0·35
1883	20,501	64	0·31
1884	22,645	87	0·37
1885	21,073	107	0·50
1886	22,113	64	0·28

Before the introduction of M. Pasteur's method the percentage of mortality among animals attacked was over 5 per cent., which by inoculation has been reduced to below ½ per cent. This is a benefit to agriculture of which the French may well feel proud, especially as other nations are evincing their keen appreciation of the discovery by adopting measures to utilise it. A special laboratory for the preparation of the "vaccine" has been opened in Turin; Vienna, Madrid, and Buenos-Ayres, also have similar laboratories in full activity, and others are on the point of being formed.

DOG CARRIAGES.—The London and North-Western Railway Company, with that praiseworthy enterprise which has always distinguished them, have had designed a new carriage for the conveyance of dogs, to meet the necessities of what has now become so widespread and popular an institution, viz., dog showing. The arrangements for the comfort and safety of the doggy passengers are most complete. Ventilation has been amply provided for, both in roof and sides of carriage, and an attendant travels in each car. Enamelled troughs are provided, and a constant supply of water, and the arrangements for securing cleanliness are complete. There need be no more smothering of £100 dogs if these capital cars are taken advantage of by dog owners.

INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA IN GOATS.—A curious method of inoculation, for the prevention of a virulent lung disease, known as "Bayoor," very prevalent among goats in Morocco, is described by Consul Payton. A portion of diseased lung is placed in a slit made in the ear of a goat not affected, and a slight cautery is applied. Great faith in this supposed preventive is entertained by the Toubalt tribe, who are great breeders; and it is said that last year, when their neighbours lost a large number of goats, they saved nearly all theirs. The disease does not attack sheep, which, like cattle, are said to be remarkably free from disease in Morocco.

JUSTICE TO THE VETERINARY PROFESSION.—The *Field*, of August 6th, in remarking on veterinary surgeons' evidence, in a leading article, adds:—"And now, while alluding to the subject of veterinary surgeons, may it be permitted to us to enter a protest against the practice of calling them, on formal occasions, 'veterinaries,' or 'vets.' Loose phraseology has supplied us with slang names for nearly all professions and trades, but these designations should not be admissible in newspapers or in the witness-box. The veterinary profession stands a great deal higher now than it did in former days, and the social position of its members is very much in advance of what it was when the fleam and a list of curious ointments formed the stock-in-trade of the ordinary farrier. Recent legislation, too, has done tardy justice to the profession, who, when referred to in public, are as much entitled to their proper title as a clergyman, a physician, or any other professional man."

THE MILITARY HORSE SUPPLY.—In the event of a war in Europe, Germany would require 400,000 horses; France, 375,000; Austria, 200,000; and Russia, 400,000. Should there be a war, therefore, the Powers would require 1,395,000 horses to begin with, and more from time to time as the animals should be killed or used up in service. England has no more horses than are necessary for her every day needs.

Correspondence.

EXAMINERS AND EXAMINEES, FROM A GENERAL PRACTITIONER'S POINT OF VIEW.

SIR,—I think it will not be inopportune if this question is further investigated at the present time. Let us approach it and discuss it as fairly, freely, and justly as we can. I prefer not to criticise too minutely or too severely the action of any individual examiner, nor yet that of the students, although much might be advanced in the cause of the one as well as the other. I would rather take broader grounds, and argue the question on general principles. In the first place, is the education of the student everything it ought to be or what it might be? In this I do not limit the inquiry to the student's scholastic attainments, but include his professional education. In the second place, is the examination of the student everything it ought to be or what it might be? And, thirdly, what kind of education and examination is best calculated to make the most useful and clever veterinary surgeon? These are plain questions, and, I think, well to the point; and I must say I wish some abler man than myself had hold of my pen and had undertaken the duty of writing upon them.

1st. Is the education of the student everything it ought to be or what it might be? Some of the students have a much better school education than others; they have a great advantage over those less educated—their minds are more refined, they are more enlightened, can understand lectures better, and with more ease become proficient in the science of their profession. This in itself is a great advantage, but if this high-class education is possessed, and practical or manual tuition has been left out during youth, such an one will be at a great disadvantage through life. But if high-class education, along with manual tuition, be given before he goes to college, then everything appertaining to the profession will become natural to him. It is all easy to him, and if he is a man possessing ability and application, he is sure to become a useful member of society—a clever and creditable veterinary surgeon.

2nd. Is the examination of the student everything it ought to be or what it might be? An examiner should be an educated man, possessed of a calm temperament, strong perceptive faculties, with urbanity and courteous manners—a man of mature age and experience. He must be one who well understands every phase of the veterinary profession. A man with no knowledge or only a limited knowledge of the veterinary profession, however highly educated he may be, is not a desirable person to be an examiner of the veterinary student. When in the act of examining a student, it is well to ascertain the amount of veterinary knowledge he possesses generally, and judge him on the whole. It is highly objectionable for an examiner, if he happens to take a student on some particular subject (possibly quite an unimportant subject), finding that he is weak on this subject, to keep him on it and to decide his case on that subject alone. Such student may possibly be well up on every important subject, and, in fact, on every other subject. Would it not, I would ask, be much more rational and fair to the student to leave that subject at once and take the student on several others, and judge of him ac-

cording to what he really is on the whole? It would be equally unjust to the student for an examiner, who happens to take a student on some particular subject on which he is evidently well up, and keep him on that subject the whole time, and decide from that alone, although such student may really be very deficient on all or most other subjects.

I have always held, and do so still, although I know there are those who are opposed to me in these views—viz., that when a student has passed a satisfactory examination on any particular subject at any examination, that such shall be considered sufficient, and such student shall be exempt from further examination on that subject; so that he may devote his whole mind and energies to the other subjects, and by doing so he may acquire more knowledge and become more thoroughly proficient on the remaining subjects. Surely it will be admitted this must be an immense gain.

It is known that students have passed with great credit (now marked "Very Good") on one subject at one examination, and in three months were considered very indifferent upon the same subject. Then, again, on a third examination, three or six months afterwards, he passes upon the same subject. Such are the anomalies arising out of casualties and varying circumstances of the case, that I venture to say that if any dozen successful students who, having gained their diploma, were to be again examined a month subsequently, one half of them would, in all human probability, be rejected. Such being the case, I say, let us in the future avoid this dilemma or incongruity by letting it to be understood, if a student passes a good or satisfactory examination on any one subject, that such should be allowed to stand, and that he shall not again be put through the ordeal of examination on that subject, and that such student shall be apprised of it at the time.

3rd. What kind of education and examination is best calculated to make the most useful and clever veterinary surgeon? I am a strong advocate for the youth who it is intended shall become a veterinary surgeon to have a good general education, and to be brought up as much as possible amongst sick and lame horses and cattle, so as to become familiar with their habits and their nature both in health and in disease. Remembering that youth is the special period in life when habits are formed, he should have every opportunity possible given him to work amongst sick and lame horses, mostly on his own account, for two or three years; have the why and the wherefore constantly explained to him before going to college. This is what I call the practical education; it is a course or process of daily training in general practice, which is not taught in the same manner at college. There are men who, it would seem, have an interest in promulgating a different doctrine, who say this is not teaching practice; they say that teaching anatomy, physiology, and chemistry is the practice, and that what I advance as practical knowledge is really only the theory of our profession. Such men may call it what they like, it does not matter to me what they call it, so long as it is insisted upon that the student shall and must have an opportunity to learn his profession properly and efficiently. I hold that the teachers are naturally and properly the legitimate parties to be looked to to prepare the student, and see that he is fit to undergo the test of examination with a reasonable prospect of success. If a student is deficient in his practical knowledge, I hold it is the bounden duty of the teachers to firmly and strictly insist on it that all students must possess this knowledge by one means or another (I care not what method is employed) before such student is permitted to present himself before the examiners.

The third session at the college was instituted for the purpose of inculcating practical knowledge, but after about fifteen years' trial it is found that students are less efficient, and there is a greater average percentage of rejections now than when there were only two sessions. I have assisted for

over twenty years in the election of every examiner, and have no hesitation in saying that each examiner has been selected for his known fitness to perform the duties. Some of them being on the Council it is found of immense advantage and convenience in explaining to the Council matters in connection with the examinations. Then as to specialist examiners, a cognomen which is a great favourite with some professors, this would most certainly be jumping out of the frying-pan into the fire. Their chief recommendation is their utter divergence of opinion on every subject they treat upon. One specialist with great pretensions expounds his view or theory on a particular subject; then another eminent specialist, with greater pretensions, at once scatters this theory to the winds; a third specialist then advances theories that squash them both; and then where are you? It has been urged as an objection that some of the present examiners have crotchets; it is not universally admitted that every specialist is a man full of crotchets. The members of the present board or court of examiners are men incapable (knowingly) of doing a student an injustice. They are for the most part the best men picked out from amongst that band of men chosen by the whole profession as the most efficient men to be found for the governing body and representatives in the veterinary profession. We expect these men to perform their duties with honour and fidelity, without fear, favour, or affection.

It is the Council's province to provide the examiners, and it is the teachers' province to provide the students. I have on many occasions been present at the examinations both in Edinburgh and in London, and could give many instances in which students have acquitted themselves most creditably. I could also, on the other hand, give many instances in which students have acquitted themselves with discredit. I will here relate an instance:—

A student, who was evidently an educated, intelligent person, went about his work well, and with his manners and demeanour was quite satisfactory; he might be twenty-four or twenty-five years old. One of the examiners requested him to examine a horse as to soundness. The horse was led in hand on a nice straight, level road; it was a bright day at noon, everything was still and quiet; before the horse had gone five yards one of the examiners said to me in an undertone, "Do you see anything?" I replied, "The horse is lame, that is quite evident." The horse was trotted many times to and fro, and the student manipulated each limb calmly and deliberately over and over again. At last he came and stated, "I find a curb and lameness on the off hind, and lame on his fore feet, the effect of fever in the feet." The examiner said, "Will you see him trot again, and be quite sure about it." This was done, and he reiterated his opinion. The horse was then taken into the stable and head turned to the door; he examined the eyes, mouth, nostrils; then he stated, "I find a little discharge from the nostrils, and an ulcer in each nostril." The examiner then asked, "Well, what do ulcers in the nostrils indicate? are they a serious matter?" His reply was, "No, they are of little or no consequence." I saw his certificate afterwards, embodying the above opinion; in reality there was not a vestige of a curb or lameness on the off limb, and he was perfectly sound on his fore feet, while the limb (the near hind) with a spavin of considerable size and dead lame on it, he passed sound. There were no ulcers, they were merely the openings of the nasal ducts. I ask, what would any profession soon become if such men as these (and I am sorry to say there are many such) were given a diploma? I would ask, is it not high time we give this matter our earnest consideration, and for pity's sake discontinue the irrational, unreasonable, and unjust system of expecting students to be fully efficient in practical knowledge, when many of them have had little or no opportunities of getting it, nor yet express surprise at the great percentage of rejections? And since the

question is propounded with such persistency, "How is it that men are appointed examiners who do not possess the necessary qualifications?" I think the inquiry may be made with equal and even greater reason in it, "How is it that men are appointed teachers who do not possess the necessary qualifications, and whose teachings are so barren and unsuccessful?"

T. GREAVES, F.R.C.V.S.

EXAMINERS.

SIR,—Allow me to state that the assertion: "Mr. Robinson is really the only Examiner to whom students object" is as monstrously inaccurate as many other strange things which have recently appeared in print, with a view to vilifying that gentleman, and indeed other members of the Board of Examiners. During my College career I myself heard every member of that body objected to in turn; and is it not well known that whatever subject a student is deficient in, or at whatever table he makes a bad appearance, to the Examiner in that subject is given all the credit for the student's failures? But even these students—a large number of them at least will, in their confidential hours, tell you that "the Examiner was not to blame," that "he asked no question he should not have asked," and over and over again have I been told by students who had been rejected by Mr. Robinson, that in going before him I had "nothing to fear," as he was a "nice fellow, and a fair Examiner."

Sir, such was my experience when the time arrived. I recognised in him a gentleman, "a nice fellow and a fair Examiner," and I look forward to the time when the cloud which his vilifiers are endeavouring to raise will have passed away with themselves into oblivion, leaving Mr. Robinson in the sunshine of esteem which he rightly merits. VERITAS.

Newcastle-on-Tyne.

VETERINARY EXAMINATIONS.

DEAR SIR,—In your report of the Southern Counties Veterinary Medical Association's meeting, I notice with much surprise that a Mr. Martin, whilst seconding a motion condemning the Edinburgh students in the recent riots, made the following remark—"It was a proverbial saying—'If you cannot face the London examination, go to Edinburgh; you can get through there easy enough.' He supposed they had been of late more rigid and searching in their examinations, and consequently the students found it was not so easy to pass."

Such remarks in my opinion are not only a direct insult to veterinary surgeons having gained their diplomas at Edinburgh, but also to the Examining Board of the R.C.V.S., a most gentlemanly and conscientious body of men.

Are we to understand from Mr. Martin that those gentlemen have gone to Edinburgh and granted our diplomas to men, knowing that they have not been tested or examined up to the standard required by our Council nor equal to that which the London men undergo. No, we cannot believe that; we have more faith in the Board than to do so; but we can believe—and know—such sayings not to be proverbial, but profoundly ignorant. I also see that Mr. Martin speaks of making the Edinburgh students come to London to be examined. I don't for a moment uphold such disgraceful conduct as was shown by some of those students, but I think it most unfair to talk about punishing all the students and their parents for the deeds of a certain set. Moreover, we must remember that the Examiners are appointed for the students' benefit, and not *vice versa*.

If Mr. Martin wishes to compare veterinary surgeons with a London training to those with an Edinburgh one, he has only to look in this month's (August) JOURNAL, and he will see that in the Fitzwygram Prize Competition the gainers of the first and second prizes are both from the Edinburgh New Veterinary College. WALTER J. FLETCHER, M.R.C.V.S.

A CORRECTION.

SIR,—In your journal of May last I wrote stating what was known as to the extent of Rabies in Egypt. In the third paragraph a mistake appeared, which I beg to correct. The child in question died in December, and not in October, 1886.

I shall feel extremely obliged if you will insert this correction in your next issue.—Yours, etc., WILLIAM LITTLEWOOD.

Board of Health, Cairo, July 26th.

TO CORRESPONDENTS.

A YORKSHIREMAN.—Your letter is too strongly personal, and its publication would not be beneficial to any one.

A. C. COPE.—Our rule is not to publish communications which have appeared, or which are intended to appear at the same time, in other journals. The reason for this is obvious.

S. WILTSHIRE, SOUTH AFRICA.—Facts are now altogether against the spontaneous development of Glanders, and it is recognised that the malady is always due to contagion.

A number of articles, reports, and letters are held over to next month.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from "Veritas"; W. H. Brookes, Fulbeck F. Raymond, A.V.D., Woolwich; A. W. Hill, London; Prof. McCall, Glasgow; "A Yorkshireman"; W. J. Fletcher, Sheffield; W. Littlewood, Cairo; T. Chambers, Dudley; A. C. Cope, London; A. Spreull, Dundee; J. Armstrong, Penrith; R. Rutherford, Edinburgh; S. Wiltshire, Maritzburg, Natal; B. McInnes, Charleston, U.S.A.; C. C. Rowe, London; J. A. Nunn, A.V.D., Natal; R. S. Barcham, Norwich; H. Kidd, Hungerford; A. Hunter, Newcastle-on-Tyne; W. B. Walters, A.V.D., Aldershot; T. Greaves, Manchester; H. J. Hunt, Newbury; W. G. R. A. Cox, Newcastle-on-Tyne; J. Cammack, Kimberley.

BOOKS AND PAMPHLETS: *G. Fogliata*, Manuale di Ippo-Podologia; *G. B. Longstaff*, Hydrophobia Statistics; *E. Dèle*, La Pleuro-pneumonie a Borgerhout; *F. Semon* and *V. Horsley*, On an Apparently Peripheral and Differential Action of Ether upon the Laryngeal Muscles; *T. Walley*, Hints on the Breeding and Rearing of Farm Animals; The Horse, Cow, and Dog, with Animal Characteristics.

JOURNALS, ETC.: *Clinica Veterinaria; Recueil de Méd. Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Annales de Méd. Vétérinaire; Lancet; British Medical Journal; Echo Vétérinaire; American Live Stock Journal; Edinburgh Medical Journal; Révue Vétérinaire; Journal de Méd. Vétérinaire; Hufschmied; Journal of National Agricultural Society of Victoria; Live Stock Journal; Mark Lane Express; Thierarzt; Army and Navy Magazine; American Veterinary Review.*

NEWSPAPERS: *Retford and Gainsborough Times; Devizes Chronicle; Daily Nebraska State Journal; Dundee Advertiser* (two copies); *Charleston Weekly News and Courier; Peterboro' Advertiser.*